District Historical Society.

First Report, containing the Constitution and an Account of the Organization of the Society, together with

"MAN: HIS ORIGIN IN GEOLOGICAL TIME,"

BY EDWARD BROWN, A. M.,

AND OTHER INTERESTING PAPERS.

The meeting was called to order by P. P. Cherry, who, after reading the call, made a few remarks, when the names of J. M. McCreery, of Akron, for pres., and P. P. Cherry, of Wadsworth, as sec., were proposed as temporary officers of the society. No other names being proposed, this ticket was unanimously elected. Remarks were then made by John A Clark, T. D. Wolbach, and P. P. Cherry. On motion, Edward Brown, of Wadsworth, and James A. Stevenson and U. D. Watkins, of Akron, O., were appointed as a committee of three to arrange a programme for the afternoon. On motion, John A. Clark and T. D. Wolbach, of Wadsworth, and J. W. Lyder, of Akron, were appointed as a committee of three to report at the beginning of the afternoon session on organization, constitution, and by-laws.

Committee on programme then reported as follows:

Meet at 1:30. 1–Miscellaneous business, including report of committee. 2–Lecture on Man, by Rev. E. Brown. 3–Discussion. 4–Paper by J. M. McCreery. 5–Discussion. 6–Other papers. 7–Miscellaneous conversation.

On motion, T. D. Wolbach was elected as a committee of one to receive visitors and contributions during the afternoon session. The society then adjourned until 1:30 P.M.

The collections on exhibition were extremely fine, numerous, and large Among the contributions to this exhibition we notice those of John A. Clark, P. P. Cherry, T. D. Wolbach, Jacob Lind, S. B. Leites, Q. A. Turner, T. W. Browning, Sol Craver, and Edward Brown, of Wadsworth, J. M. McCreery, Jas. Stevenson, U. D. Watkins, and J. W. Lyder, of Akron; John Sheets, of Chippewa; Henry Hosmer and Orange Hossington, of Seville; Dr. Young, of Weymouth.

Those having large collections on the ground were Lyder, McCreery, and Stevenson, of Akron, and Lind, Wolbach, Cherry, and Clark, of Wadsworth. Among the articles on exhibition, we noticed 105 skinning-knives, 38 stone axes, 700 arrowheads, 100 spearheads, 9 stone pestles, 10 pieces of pottery, 3 discoidal stones, 1 stone image, 11 stone pipes, 15 thread-gauges, 10 weights, 4 club-stones, and some 300 other articles, including mortars, specimens of engraving, sculpture, ornaments, and miscellaneous articles, etc.

At half-past 1 P.M. the meeting convened again, and the committee on constitution and by-laws reported as follows:

CONSTITUTION.

1. This society shall be called the District Historical Society, and shall embrace the counties of Medina, Summit, and Wayne.

2. The objects of this society shall be the collection and preservation of facts illustrating: 1st, The archæology of the counties; 2d, The pioneer and civil history of the counties; 3d. The geology and natural history of the counties.

3. All residents of the counties may become members of the society by causing their names to be enrolled by the secretary, and paying an initiation-fee of fifty cents, and shall be entitled to all the privileges of the society, so long as they shall pay thereafter an annual fee of twenty-five cents.

4. The officers of the society shall be a president, vice-president, secretary, treasurer, and curator. The president, vice-president, secretary, treasurer, and curator shall be elected at each annual meeting, for the term of one year, and shall hold their respective offices until their successors are elected, and have accepted.

5. The president shall preside at all the society meetings. In the absence

of the president, the vice-president shall act as president.

The secretary shall keep a record of the proceedings of the society, and shall conduct the correspondence of the society.

The treasurer shall collect and safely keep all moneys belonging to the society, and shall disburse the same upon the written order of the secretary, countersigned by the president.

The curator shall receive and care for all specimens, papers, etc., donated or belonging to the society.

The officers of the society shall constitute an executive committee, which shall have general supervision of the affairs of the society, prepare programmes, and call special meetings when it is deemed necessary, or when requested by a majority of the members of the society.

6. The annual meeting shall be held in September or October of each year, at such time and place as the executive committee may elect.

7. This constitution may be amended at any regular meeting by a two-thirds vote of all the members enrolled as in attendance at the meeting.

By-laws may be adopted or amended by a majority vote, or may be temporarily suspended by a two-thirds vote.

8. Elections shall be by ballot whenever two or more persons are put in nomination for the same office; in other cases, by a *viva voce* vote.

9. The society shall, in its archæological department, be auxiliary to the State Archæological Association and make an annual report to it; and copies of all publications made, either in book pamphlet, or newspapers, shall be sent to the State Archæological Association at Columbus, the Historical Society at Cleveland, and that at Cincinnati.

This report was accepted and adopted.

The secretary then passed a paper among the audience, to obtain the signatures of those wishing to become members, after which, on motion, the following permanent organization was effected:

J. M. McCreery, of Summit county, President; John Elliott, of Wayne county, Vice-President; P. P. Cherry, of Medina county, Secretary; T. D. Wolbach, of Medina county, Treasurer; J. M. Stevenson, of Summit county, Curator.

Edward Brown then read his paper,

MAN—HIS PLACE IN GEOLOGICAL TIME—HIS ORIGIN AND DATE.

Nearly three thousand years ago a Hebrew poet—the psalmist of Israel—sweeping the starry vault through the clear sky of Palestine, wrote: "When I consider thy heavens the work of thy fingers, the moon and stars which thou hast ordained, what is man that thou art mindful of him, and the son of man that thou visitest him! for thou hast made him a little lower than the angels; thou crownedst him with glory and honor; thou madest him to have dominion over the works of thy hands, thou hast put all things under his feet; all sheep and oxen, yea, and the beasts of the field, the fowl of the air, and the fish of the sea and whatsoever passeth through the paths of the seas."

The language of the question, What is man? here does not seem to be depreciatory or a disparaging of man, but magnifying. If the Being who is so great that the heavens are but the work of his fingers is mindful of man that he visits him, that he puts him above all the work of his hands, how great a being man must be! The question of Israel's sweet psalmist is the question I propose to consider—What is man? If there is anything to excite the wonder of the geologist, and call forth admiring devotion more than any other, it is the tracing of a great plan running through the Ages, connecting all the formations together, and culminating at length in one point. It is, indeed, a natural religion, beginning with a great First Cause—a creative mind—with unerring precision working out a great purpose—one worthy of himself. The

study of the Ages is the study of a series of prophecies, all pointing to a being yet to come, yet to have dominion, for whose sake all these Ages existed, these stupendous works went on. There is no fact more apparent to the geologist than that each Age had just the orders of life the world was then adapted to: nothing before or after its time or out of place. The more each is studied the more apparent it becomes that each had its mission, and having fulfilled its mission, passed away—the very lowest orders sometimes performing the greatest works—the coral building continents, and the rhizopod laying the floor of the ocean, or its remains forming the chalk mountains, or the thousands of feet of nummilite limestone. Yet another fact is equally apparent, that in all past ages there was an incompleteness; yet in all a looking forward, a prophesying of other ages and other beings. The tepid waters of the eozoic ocean were just fitted to the protozoa; and the protozoa appears and lays a foundation for something greater than itself. The earliest of the Archean Ages produces the minerals, yet no chance action locks them up in the hidden recesses of earth's center like the miser's treasures, where they can never be used, but a providence has thrown them out near the surface for future use, and thus foretells a coming being who will know their value and appropriate them to his varied purposes. But as ages roll on no such creature appears. The creatures of the primordial sea or of the silurian beaches have no use for gold, or silver, or iron. Limestone and phosphorus form the shelly encasements of the higher orders, and thus intimate higher creations to call for other substances. Each new creation calls for new material in limited quantities; yet still say, "These vast stores are not for me." Future ages must disclose, and beings to come must learn their use.

The vast stores of fuel laid up in the Carboniferous Age were not for the great saurians that followed next after, nor the huge quadrupeds of the succeeding periods, nor the birds of the air, nor the quadrumana that lived in the trees. Not one of them had even the skill to kindle a fire. Yet all these vast stores were laid up for a being that could learn their use. The enthusiastic materialist who fancies he sees in the original molecules of matter all possibilities, out of the evolution of which may spring this wondrous earth with all its teeming life, leaves out of the account providence, or foresight. Such vast stores to lie there from world age to world age; hidden in the depths till a being should come who should discover their use: for whom it was perfectly adapted, and as he improves, becomes a necessity, argues something infinitely beyond mere possibilities of unconscious matter. If development can make a tree, development cannot foresee its use. If development can also make a man, it could not fit the tree to the man, thousands of years before, so that when man came he should see its use, and learn that it was made for him. Development could not contrive coal out of a dead tree—past development—so that when in long ages after, when the developed man should develop the steam engine, he should find that coal, developed there long eons before, just fitted to run that engine. That bespeaks infinite foresight. Infinite foresight is an attribute of infinite mind. Infinite mind is God. If science does not disclose this infinite foresight running through the ages, we can place no reliance upon induction. The same remarks hold true, when we consider the passing away of the dynasty of huge mammals of the Tertiary Age, before the introduction of man. Of the appearance just before his advent, of the cereals, the natural food of man. Of the new preparation of the soil in the glacial period, in the Northern and Southern temperate regions, man's natural abode. I have hastily glanced at these items, on some of which I shall enlarge, to bring out this thought, That man was the great thought of God in the creation of the world; or that he is not an incident, or accident, or mere link in the chain of beings of this world, but that for which all else ex-

isted. The Coral and the Rhizopod, too low down in the scale of life, even to feel, or to know; with only, as it were, the rudiments of sensation, have had their mission. They lived for the sake of the world; its unconscious builders. To themselves their lives were no blessing, their death no calamity. So we may say of each order of beings below man. They existed for the world, or its inhabitants; and the great question for the solution of the Naturalist, is not merely their curious and wonderful structure, but their use—to what end, this curious and wonderful structure. Having found this, we know the creature. But man is the reverse of all this; a being not for *use*, but to use. He bears no part in the structure of the globe. The lowest molusk, whose fossil remains are found in the limestone, has in this work done more than he. He prepares the way for no other creature, but every other creature has contributed its quota to prepare the way for him. In short, he was not made for the world, but the world was made for him The limits of this lecture will not permit me to particularize as I might, but simply to indicate the series of prophecies looking toward the appearance of just such such a being as man is, that may be traced all through the long series of ages. I have hinted at the formation and distribution near the surface, during the Archeon Ages, of the most useless thing to all other creatures, but the most useful to him—the fusable and malcable metals. A necessity, not to his existance as an animal, but to his complete development. Without them he sinks to a savage, and a savage is only the animal man, with his manhood sunken, or lost; man only in caricature; of use, perhaps, but as a user, man's true position, a failure. And this suggests another thought, that all those things necessary to his higher development, lie hidden from instinct, and appear only to higher reason; the more refined requiring the greater refinement to discover or apply.

We come then to the question; What do geology and its chief auxiliary, science, zoology, or more comprehensively ontology, teach us in respect to man? That he is the ultimate of the physical world—the highest and last term in the series of animal existances; the true response to all the provisions of Nature. The lower orders of life are limited in their range, and not one of them in its physical or mental structure, is fitted to use, enjoy, develop, or be benefitted by the higher provisions of the natural world. Not one of the things essential to make a civilized man can be understood or made use of by any being below man except in a very limited degree as taught by man. Nor, on on the other hand, is there any earthly material or earthly force beyond the use of man, as he becomes developed in mind, and the creative or inventive faculty; the God Nature, or "image of God," is educated into activity. The winds and the waves, proverbially the wildest and most lawless powers, at his behest, come under his control, and their blind forces, though bound fast in nature's laws, work out the plans of a being who has learned to rise above the bondage of nature and bring the tyrant that holds in chains all other creations into subjection to his will. The sun, which the heathen worshiped as a god, obediently copies his own painting upon the prepared leaf of the photographer. The electric current once dreaded as a terrific demon in the lightning's discharge, obediently traverses a continent or passes through the path of the seas, and delivers his messages, and the waves of sound through the telephone are even now singing through the land the refrain to the anthem, "Thou madest him to have dominion over the works of thy hand; thou hast put all things under his feet." Every higher faculty or susceptability that he possesses in common with other creatures, in man exists in a degree immeasureably above what it can attain in them; not as an instinct, or a power limited to the narrow range of present physical wants, but as a power unlimited—called into exercise at his will, while his higher powers and susceptibilities

find no correspondence or only exist in inferior degrees in the lower animal. Of these we may particularize the creative, or inventive faculty I have before referred to. The beaver at the first acting from an instinct necessary, from the laws of his being, constructed his dam to raise the water of a stream; but the first beaver probably made as good a dam, and on as correct scientific principles as his last descendant, and the first rude dam built by man was probably inferior to it. But man, by experiment, and the study of the principles of hydrostatics, is enabled to bring his work to a perfection that he can arrest the course of the most rapid rivers, and make the arrested current work out an endless variety of purposes. The hornet was the first paper maker, and man's first attempt was probably inferior, but the uses and purposes to which he applies his discoveries, for which perhaps, he was primarily indebted to the insect, and the fineness of the material are marvels that once might have been regarded as miracles, while the coarse paper structure of the hornet is the same in form, material, finish and use as might have been made by its ancestor of thousands of degrees of remoteness: in a niche of the pyramids, or the rafters of the ark. The imitative, picturesque faculty in man, is also another that he possesses in common with no other creature. No other creature makes a picture, or an image, but this is a universal characteristic of all races of men. No matter how low down in the scale of civilization; no matter how grotesque, rough, and rude the representation; whether it be picture, carving or sculpture, we at once recognize it as unmistakably human. Whatever we may say of the probable origin of man, here is something he has not received by decent from any brute ancestry. At least we may wait till some simean artist or sculptor has been discovered, before we look for signs of development in that direction.

I once resided in the portion of Wisconsin where the works of the mound builders were probably the most numerous. No human skeletons were there discoverable, but the parallelograms and circles, and more especially the constant occurrence of imitations of serpents, tortoises, and lizards, showed not only that they were human works, but probably those of reptile worshipers, though occasionally there were rude representations of such animals, as wolves, bears; one large one in Grant county seeming to be designed to represent a huge elephant. It is not enough to say here that the chasm between the highest beast and the lowest man, is immense, but here is a new faculty, or susceptibility that has its beginning and development in man alone.

In the religous and moral faculties. Man everywhere recognizes a Supreme Being, and a future life and obligation arising from his relation thereto. No such recognition is discernible in any other creature. By the same reasoning by which we infer from the eye of the tribolite the existance of light in the silurian age, and by the eyeless structure of the creatures in the deep caverns of the earth, that they were made for the darkness, we may draw the conclusion from this recognition of God and aspiring after immortality characteristic of the whole human family, that man is a being re-created for existance beyond this life.

He differs from other creatures in his power of communicating his knowledge indefinitely to his fellow creatures, and transmitting it to his posterity. The very object for which we are to-day assembled evinces the superiority—the headship in the creation of man. No other creature knows its own history, or has the capacity to search for it. It leaves to the world only its skeleton. The dog shows a great capacity for improvement under the guidance of man, but he publishes no dogmas for the instruction of his brother canines. The "learned pig" of the showman never goes to the sties to set up a "mission school" for the enlightenment of his ignorant porcine neighbors.

But in our desire to dig up the hidden records of past ages, and transmit

our discoveries to those who shall follow us, we evince that we are the true "image of God."

Aother evidence that man is the last term in the series of earthly existences, is that not only has he faculties and susceptibilities corresponding to every object in nature, but that we cannot suppose any new sense or faculty without going beyond this world for its correspondence. It seems to be the universal thought of the human race, that whatever is super-human belongs to a different world, and a different natural system from ours. Every religion and every superstition recognizes this as a truth. But whatever is visable to us, whether in this, or other worlds, appears to belong to the same system of nature, for the telescope shows that all other worlds are governed by the same natural laws, and the spectroscope shows them to be composed of the same materials. So we may extend our reasoning further, and say that the perfection of existence in these, must also be essentially men. This view of our subject, then, affords us a hint as to the time in geological ages when we should look for the first appearance of man upon earth. If man is the perfection of animate nature, his appearance should naturally be last. No stronger evidence of an all directing and infinite intelligence behind all the phenomena of earth can be furnished than the fact that Geology discloses that each order of life appeared in its right season, just when the earth was fitted for it, and when its natural aliment existed in the greatest abundance. In this regard there was nowhere any abnormal development, no error of time or place; no creatures struggling for existance because introduced into a poorly provided world, supplied grudgingly by a parsimonious and impoverished nature. The teeming life in the Silurian sholes and the Devonian seas, attest that He who commanded the waters to bring forth abundantly, also opened his hand liberally to supply the wants of every living creature.

Nor did any lack the necessary conditions to the enjoyment of their existance, each coming in its proper season, and bounded by its proper zone. When the atmosphere was surcharged with carbonic acid, as it must have been in the carboniferous and cretaceous ages, the air did not resound with the terrific sighs of the huge mammals, panting and perishing by suffocation, for want of pure air for lungs made for fast breathing, and the supply of warm blood, but such a carburetted atmosphere was just fitted to the cold-blooded, slow breathing reptiles that were then the perfection of creation, for a world in that stage of preparation. Nor were the barren, denuded rocks, the deep canons and inland sea, marshes and mountain-forests of the tertiary suited to the grazing ruminants, but were the paradise of the browsing and root-digging pachyderms. If, then, man is, as I have assumed, the perfection of animated nature, for whom the world was made—toward whom all the ages pointed—his time must be last of all; his place a complete world, and his range, all nature. When even the unconscious molusk must wait till the sea was filled with its food, such an anomaly as man, the perfection of nature, appearing upon the earth before it was completed for his use, would be a contradiction of all that the ages prophesied. Not till every material was placed within his reach; till the soil was spread over the earth, and that earth supplied with water easy of access, and his natural food abundantly provided, could man appear. This thought, then, supplies us with an *apriori* argument that not till the four staple articles for the food of man had become abundant, could we expect to find any evidence of the existence of man. Those four articles are the cerial grains, the succulent fruits, ruminating animals, and the scaly fishes. For these conditions he must wait till the post-pliocene period, and of that the post-glacial epoch. Not that none of these existed before, but the few that may have appeared in the pliocene, were but the indices or prophecies of what was to come, that only bespoke the twilight of man's day. To search for the remains

of man in the deposits of the pliocene, were then vain. The seeming exceptions being found only in lands subject to frequent disturbances by earthquakes. The ruminants belong almost exclusively to the quartenary or post-pliocene. so do the cerials. Mr. Vician in a discussion of this question in the meeting of the British Association at Birmingham in 1865, stated that there were no traces of them in any older geological formations. The same is mainly true of the succulent fruits, and scaly fishes. To determine the age of man. we need go no further back than the glacial epoch. If that can be measured we have a measure of man's time upon earth. Objection has been made against the received chronology hf 6000 years as too short by the known laws of increase, to have filled so large a portion of the earth with so dense a population. The objection has considerable force, and we are bound to no such chronology on either scientific or theological grounds. On the other hand the long periods of 100,000. 200,000, or even 400,000 years, assigned by some venturesome archæologists, are open to still stronger objections from the opposite reason. By the same laws of increase, every part of the world must long ere this have been filled with human works and remains. But the fact that they are so rare, shows that even making allowance for their extensive destruction in the lapse of ages, they indicate a sparse, not a dense population.

In this, as in most cases, the truth probably lies between the extremes. The oldest historical records of man, are the Mosaic history, too brief, and too general in its charter to have intended to give exact historical data. There are two extremes to be avoided. 1. A rashness in ascribing an immense age to every new discovery in archæology, particularly on the part of some who are anxious to throw discredit upon the Christian Scriptures. 2. An unreasonable timidity at any doubt being raised of our translation of the terms used. or the received chronology. To such I would commend the remarks of Dr. Thompson, who has been for years in the Eastern world. making a study of Oriental archæology. "I have no doubt there is yet to come to us from Arabian, and other Oriental sources, a mode of interpreting chronology according to these lists of names, which we have not fairly got hold of, and are not, therefore, troubled by any seeming discrepances."

The oldest fossil remains of man are those recently discovered in the caves of France and Belgium, that singularly give their testimony against any low origin to the human family. Though barborous, and of the Tauranean type, they show a size and cranial capacity fully equal to the modern European. Though dead, they yet speak, and say of the primitive man, "Thou madest him a little lower than the angels." Not "development fashioned him a creature of doubtful humanity. a little higher than the gorilla." Whatever we may say of the development theory, it is not so far supported by the oldest preserved human skulls, those of Cro-Magnon La Madelaine and Mentone, being fully up to the average of the present day. Man, then, may be regarded from a scientific point of view, as not only the culmination of physical life in this world, but the being for which it was created, and still exists; the offspring of God, and kindred to all that is high, great, and noble in the universe.

J. M. McCreery then read the following paper:

THE OLDEST INHABITANT.

Conventions are the order of the day the world over; and, when the historian of the future shall come to classify the time following the Iron Age, he may well designate the present as the age of brass. and the closing part of the nineteenth century as the age of conventions—for we are treated to conventions upon every known subject under the sun. from a convention of national bankers at New York to a convention of San Francisco hoodlums, or from a social science convention at Saratoga to a convention of

ratcatchers at Paris. And in no branch of industry or study are conventions more necessary than in the department of natural history. Not to speak of the interest created by these conventions, they give an opportunity for comparison of specimens and interchange of ideas which can be gained by no other means. And, to show the increasing interest shown in archæology, and particularly that branch relating to ethnology, I may safely say that fifteen years ago such a convention as is now gathered in this hall, to discourse the subject of the "Oldest Inhabitant," would have been simply an impossibility.

The riddle of the pre-historic race of America, the wonderful people who lived, built mounds, moulded pottery, fashioned the flint arrow-heads so skillfully that modern ingenuity is at a loss to discover the modus operandi—whose stone axes are marvel to the modern stonecutter, while hundreds of strangely-shaped rocks—polished stones of such varied shapes that a use for them can not be imagined — while to this day the source from which they obtained the stone is positively unknown;—a people who built mounds larger than the pyramids of Egypt, making perfect squares, the sides running directly east and west, showing some acquaintance with the points of the compass;—or throwing up immense earthworks in a perfect octagon or circle, a feat which is difficult for the modern surveyor;—while many of the mounds of Missouri are shaped like immense animals, such as the elephant, lion, and stupendous serpents;—a people who made no use of stone in their architecture except the cobblestone, or hard-head, roughly thrown up to form an altar or a signal-station on some elevated knob;—who had no written language;—who vanished before the approach of the more warlike Indian, and left the remains which "the rude swain turns with his share and treads upon"—are all that are left to tell the tale of his existence.

In Europe the evidences of the existence of man, ages before history, either sacred or profane, exist, or much longer than modern chronological dates as the time of his appearance on the earth, are found much more abundantly than in America. Stone implements are found in France, Belgium, Scotland, Switzerland, England, and Ireland. In France these remains are found principally in the caves where the drippings of the roof have covered them with a coating of stalagmite four or five inches thick. The remains consist of portions of the human skeleton, arrow-heads, war-clubs made of the leg-bones of the reindeer, which has since disappeared from southern Europe to the cold regions of Sweden and Norway;—the elephant, now found only in Asia and Africa—together with the bones of the bear, hyena, lion—all different, however, from those now living in other parts of the world, while the shape and form of a hairy elephant, figured on a piece of ivory, found in a cave, is conclusive evidence that the hairy elephant, known to science now only by the remains found in the ice of Siberia, must have existed in Europe at the time of its first occupancy by man.

A skeleton found in Belgium, in the year 1833, which undoubtedly—in fact, unquestionably—belonged to the beginning of the Stone Age, was pronounced by Huxley "a fair average skull." But one found since, in the same locality, was remarkable for the low forehead, unusual thickness of the skull, and the want of prominent chin-bones, all marks of inferiority as compared with the shape of the average skull of Europeans at this time. A skeleton was found in what is now the famous Neanderthal Cave, in 1857. It lay in a bed of mud, and there is no evidence that it might not have been washed where it was found. This skull is very thick—almost half an inch, but the capacity of the brain is between the two extremes of the highest and lowest at the present time; and, although the ridges over the eyebrows are very prominent in outline, yet so high an authority as Huxley says that in no sense can the Neanderthal skeleton be regarded as the remains of a

human intermediate between man and the apes. Some of these skeletons, though of full-grown men, as was found by the perfected sutures of the skull, are only four and one-half feet high, corresponding, in hight at least, with the Esquimau and Laplander of the present day.

In Denmark stone implements, many of them polished, and broken pottery, are found, with the evidence of great antiquity; but here for the first time the bones of man's faithful companion, the dog, are found. The skulls are still of the same round-headed race as those of Belgium, just mentioned.

In Switzerland, in the water of the lakes, in some places at the depth of fifteen feet from what is now the surface, remains have been found of villages which had been built on posts, or piles, driven into the muddy bottoms of the lakes. They had streets built of piles, leading from the shore and from house to house. Whether these villages were thus built to protect them from human enemies or from wild animals is not known; but here for the first time we have evidence that man had domesticated the horse for his use, for his bones are found among the stone axes, pottery, bone awls, needles made of fish-bones, etc., which are dragged up wherever these lake-dwellers deserted, and wherever buried villages are found.

In America, owing to our large territory and the comparitively few interested in such matters, the evidences of man's existence, at any very early period that is definite, are not positive. A portion of a skull was found in the gold-bearing gravel of Table Mt. California, underlying a bed of lava, which formed the top of the mountain; but, owing to the uncertainty attached to the finding, but little attention is paid to it, although bones of the mastodon and elephant are found in the gravel higher up than the skull is reputed to have been found. And, on the other hand, there is a petrified skeleton in the British Museum, from Gaudaloup, found in the limestone cliffs which are now forming, and from history are known to have been Caribs slain in battle less than two hundred years ago—while the careless observer might imagine them to be thousands of years old, because found in solid rock.

No positive evidence of man's occupancy of America previous to the deposit of the glacial drift (or sand and pebbles found in such immense quantities over northern Ohio), nor have any remains been found actually in the drift, where there were not grounds for strong possibility that the gravel might have been moved by water subsequently to the original deposition, and thus the arrowheads, etc., buried with them. Yet it is a startling fact that we know so much of the origin, the causes, and the effects of the ocean of ice, which poured down from the regions of eternal snow, and covered northern Ohio, in some places to the depth of hundreds of feet, with gravel, clay, and bowlders, the weight grinding grooves in the rocks, leaving footprints as plain to the geologist as the track of the bear to a hunter—so that to-day we know, to the fraction of a degree, the route traveled by these glaciers, although they existed previous to even the Mound-builders. It is probable that the depressions occupied by the Atlantic and Pacific oceans, and the amount of water they contain, is so much greater than that of the Arctic Ocean that, in the contraction that has been taking place in the earth's crust for millions of years, since the surface cooled sufficiently for the dry land to appear, or since the earth was void and without form, that their contraction slowly and almost imperceptibly raised the northern portion of America, thus allowing the millions of tons of ice to pour down and cover the rock face of the land, with sandy soil, and fit what is now the Western Reserve with a soil suitable for drifting; and, by grinding up the blue limestone, and distributing it along the southern edge of the glacier—which only reached to the Ohio River—it has given us the blue-grass regions of Kentucky. But this elevation of the northern portion of what is now North America resulted in an-

other effect. Behrings Straits, which now separate America from Asia, would then be dry land, and the Gulf Stream would no longer pass around the Northern continent to modify the temperature of our eastern shore, but the passage from Asia to America could be made dry-shod. As the land resumed something near its old level again, by the still further contraction of the earth's crust, the ice disappeared, the rivers carried off the water from the mountains of melting ice, which swelled the smallest streams to mighty torrents, cutting immense valleys through the soft ground, such as we find along the Big and Little Cuyahoga. But it did more than this. The lowland which had connected America and Asia was again covered with water, the Gulf Stream resumed its old route, a vegetation suited to the changed condition of affairs would be developed or created, and the venturesome traveler on American soil must remain a prisoner—a victim to his temerity; and the fact that there are no evidences of man's occupancy of this continent, prior to the close of the glacial period, would seem to indicate that he reached it by emigration from the north. And yet, when we come to compare the skulls taken from the mounds, which are undoubtedly those of the Mound-builder (for the American Indian made use of the mounds for burial purposes after they were deserted by the race who built them), these skulls, in shape and general development, compare very closely with the skulls taken from the mounds in Mexico, and with the human heads figured on the Mexican monuments, which are supposed to be as old, if not older, than the mounds from further north—a skull with an extremely receding forehead, a people low in the scale of intelligence, and not having those warlike qualities possessed by the Indian, while the immense number of burial, signal, and other mounds scattered over the country, in comparison with the few forts, seem to indicate that beyond doubt the Mound-builders were not an intellectual or warlike people, which seems to accord well with the traditions of the Indian tribes at the time of the discovery of America—that their ancestors had driven out a populous nation, and taken possession of their land. How long since this may have occurred is not known. In Mississippi were found the bones of the elephant, long extinct in America, either from a change in the vegetation not providing him with food, or some other uncongenial condition. These bones are found along with human remains, supposed to be those of Mound-builders; while, on the other hand, Winchell claims to have seen the remains of the elephant dug out of peat-beds, where three hundred years would be long enough to account for the peat that covered them.

They possessed some arts which the North-American Indian did not, and among these was the art of weaving; and many of the polished stones with holes drilled through them, many of them diamond-shaped, and supposed by many to have been used for seizing their bow-strings, were undoubtedly shuttles; and many of the so-called sinkers were used for weighting the warp, or thread, while the filling was being passed in and out around it by the slow process which their rude looms must have necessitated; for no people would take the pains to carefully round up, polish, and drill holes, or else cut a nick around a stone with the few implements they possessed, for the purpose of making sinkers for their nets when anything else with sufficient weight would answer the same purpose. They possessed the art of making pottery that did not crack or check in drying; and every boy who has made mud marbles knows that this is no easy task. By adding a sufficient quantity of ground-up shells, such as our common mussel, they made vessels, some of which are found unbroken at the present time. Some are plain, some ornamented with lines; while in some cases an ear of corn was pressed on the plastic clay, and in others the thumb nails were used for ornamenting the rim—much as our mothers used to ornament the pies that gladdened our boyish hearts. Some

of these vessels were quite large, being molded inside of a wicker basket, and then the basket burned off; and in the Southern States, pottery is found glazed, like our modern ware. Some of their pottery again is cut out of steatite, or soapstone, and some of the so-called knives, skinners, etc., may have been used for the purpose of chipping the soft stone—some of the vessels having undoubted marks of hacking with some blunt tool. Another peculiarity about all the holes found drilled in their stone implements is, that they are countersunk as though drilled with some blunt instrument, tapered to a point, and the drilling continued until this point came through so far as to make a hole the size they wanted; and two holes are never found on the same stone that look as if drilled with the same tool, for the nicks in the sides of the hole are always different, which has led to the belief that they drilled them with hard wood for a drill and sand and water to furnish the cutting power. As to the means by which their arrow-heads were made, I am inclined to think, like Prof. Denton, of Boston, who claims it to have been done by pressure; and anyone can convince himself that they might shape them in that way after the sides were thin enough for the purpose, while the immense number of flint chips and arrow-heads, in comparison to the number of perfect heads found, seem to indicate that with all their skill they spoiled an immense number in their manufacture, while an arrow-head made of quartz, which has not even the imperfect cleavage of flint, requires still greater art.

Of the remains left by this people in Summit county, the most important is Fort Island, in Copley township, on the land of Lela Bosworth, where, in the middle of what has once been a lake (though only a very deep swamp with rank vegetation now), there is an island, some fifteen feet higher than the level of the swamp, and from three hundred to four hundred yards in diameter, with a line of breastworks extending around the entire distance, except at one point, which seems to have been a gate, or entrance. The top of the island is level, and it is literally covered with mounds from six to fourteen feet in length, and varying in hight from a new-made grave to two feet. Many of them have a depression beside them as though the earth had caved in, or else been used to bank up the mound. The island is covered with the original forest, and the trunk of an oak is decaying which must have been four feet across the stump, and a stick seven feet long run into the muck of the swamp failed to find solid bottom, and the land at the point where it approaches nearest the island is strewn with flint chips, and a large number of arrow-heads of all sizes have been found. No excavations, I believe, have ever been made in a way to know whether the origin of this wonderful remnant of pre-historic warfare was a fort of defense, as its location in the center of a lake would seem to indicate, or whether it was a burial mound.

Another remarkable mound, probably used as a signal station, is found on the land of Mr. Barnes, in Norton township. The conglomerate rock forms a high ridge with very steep sides, and at one point rises considerably higher than the surrounding ridge in a sharp round knob, and from the top of this knob the sweep of landscape laid out before the vision is grand; while on the topmost pinnacle there existed, at the settlement of the country, a stone mound built of the hardheads from the drift, with a large chestnut-tree growing on the side, finding soil for its roots deep among the bowlders. Although almost decayed at present, so that its age can not be told, from this knob a fire would be visible three miles north or east of Akron, or to Cuyahoga Falls, and to the Tuscarawas Valley in the opposite direction. Another such point could not be found for miles in any direction. No thorough survey has ever been made, nor has it received the attention it deserves.

At Johnnycake Lock an immense mound was cut away in grading for the schoolhouse, and many polished

stones, copper beads, etc., were found, but most of them have been lost except two or three in the possession of Mr. Stevenson. As to its shape externally, I can not say; but a few feet from the surface a pyramid about 25 feet square at the base was found, built of cobble-stones; and on removing this the stone implements were found. At Yellow-Creek Lock there are two mounds — one small, hemispherical-shaped, the other very large, with square base, the sides tapering regularly to the hight of twelve feet, and the top flat and level as a floor, presenting the appearance of a pyramid with the top cut off. This is all cleared land, annually plowed over, and a few years will obliterate its main features. Neither of the latter have been opened. They are on the low land on the west side of the canal, while on the overlooking high hills on the other side are the remains of another fort which I have not visited.

This concludes this too-lengthy article. I lay no claim to originality of matter contained in it. I have drawn from Foster's Pre-historic Race, Baldwin, Dana, and others. As to who the people were, and whence they came, I have attempted no explanation, but given some of the facts actually known of this mysterious people; and I trust that this convention may be the means of calling the attention of farmers and others to the various implements of this lost tribes scattered over the farms, and result in their preservation for future study by the archæologist; for these are the rock-writings by which, if ever, the history of the oldest inhabitant is to be deciphered.

Remarks were then made on this by Brown, Wolbach, Stevenson, Cherry, McCreery, and Clark.

A motion was then made and carried that the Convention do not hold an evening session on account of the absence of the expected speaker, and other conflicting circumstances. T. D. Wolbach then read the following paper:

EVIDENCES OF COMMERCIAL INTERCOURSE AMONG THE MOUND-BUILDERS.

There undoubtedly was trafficking between distant communities of these pre-historic people. Numerous articles of industry, warfare, and ornament, fashioned out of copper, hematite ore, greenstone, quartz, chalcedony and other hard stone, bone and deer horns, that have been exhumed from these ancient mounds, remain to us as evidence to-day. Let us not suppose that these articles so well preserved, that have lain for hundreds, yes, possibly thousands of years, was the only material used in commerce in that far-off, and to us mysterious age. Fabrics of more perishable material of various kinds might have entered into the variety that was carried by these traders to exchange for commodities such as they did not possess, or could not produce in their own communities.

The copper mines on the southern shores of lake Superior bear positive evidences of having been worked at a very ancient day. Wedges and hammers of greenstone are found in abundance in and about the old mining-pits of that locality. In opening one of these pits some years ago, a detached mass of metallic copper weighing several tons was uncovered; under it were found billets of cedar wood that had changed, through the long period of their sepulture, to the consistency of peat. How long and patiently a gang of these ancient miners labored at this immense copper nugget to isolate it from the surrounding rock, we can only conjecture. It is hardly reasonable to suppose that the party who wrested it from its rocky prison designed working it up into implements to be used about their persons, or kept about their individual habitations. The spirit of traffic was among them. The wares of the workers in copper were carried to remote regions and exchanged for other products. If they had anything that was used as a medium of exchange as money is at the present day, we have not been enabled to discover anything of it up to the present time. Beads of bone, shell, and copper have

been found in varying quantities in a great number of mounds that have been opened, but always in such situations as to show that they were used to ornament the person. The lighter articles of copper were carried to a great distance from the copper region. Beads, bracelets, rings, and other small trinkets have been found in the mounds as far south as Louisiana, and as far east as the Atlantic coast, while heavier articles, such as axes, spear-heads, knives, etc., have seldom been found at a distance to exceed three hundred miles from the copper mines of Lake Superior; and it is an accepted theory that the Mound-builders received their supplies of copper from that locality. It might not be unreasonable to say that those who had control of the copper regions knew well the superiority of copper implements of war over the ruder ones of stone; and consequently they were careful that only the most harmless articles were used in trafficking with distant communities.

Although it might be that the heavier articles, being too much of an encumbrance to carry, were never taken to great distances, another reason might be assigned: that the heavier articles, being the most coveted, were the first things disposed of, before the trader got very far from home.

Sheets of mica have been so commonly found in the numerous mounds of the Mississippi Valley that for a long time it was a puzzle to the archæologist to tell where the supply had been drawn from, when the question was finally solved by the discovery of the mica deposits in North Carolina, and sufficient evidence that they had been worked by man at some very remote period.

Obsidian from the volcanic regions of Mexico is found in the mounds as far north as Lake Erie, with at least a thousand miles intervening between the points from which in could have been taken and deposited. How or for what purpose were these pieces of igneous rock carried such a long distance? An acceptable theory is that being regarded as a precious stone—it was carried great distances, and disposed of at good prices by the pre-historic traders.

Regarded, perhaps, with superstitious reverence, the obsidian was deposited along with other valuable articles in the sacrificial mounds by this extinct people, where we find them in our day.

Worshipers of idols, they erected altars, and made burnt offerings, probably of the flesh of animals. No burnt human bones have as I believe yet been found, to prove that human victims were used. In the sepulchral mounds were deposited axes, arrow-heads, and other implements wrought from stone or copper, besides pieces of mineral not common to the locality—and not unfrequently obsidian.

Little have that far-off and singular race of people left us to weave their history from. But these little articles of almost imperishable material, from widely-scattered localities, seem to tell as legibly enough that there was commercial intercourse among them.

P. P. Cherry then read parts of a paper entitled "The Pre-historic Races of America." The manuscript is not obtainable; but the speaker spoke of the wonders of America, her great age, and numerous evidences of the pre-historic occupation of this country.

On motion, a recess of ten minutes was held, to enable those who had come in late to view the collection of relics. After the recess, it was moved that a vote of thanks be offered to those who had contributed to the interest of the occasion.

Remarks were then made by Mr. Brown on the numerous mounds of Wisconsin and their serpentine and animal form.

A general conversation was then indulged in, during which Mr. Browning spoke of the great value of geological charts in the study of the science.

The society then adjourned, subject

to the call of the president.

Take it all in all, this convention was a grand success, and succeeded in establishing a tri-county historical convention which it is hoped will rapidly increase in size, and be productive of much good in preserving our country's past—and the aid it will give in solving the archæological riddles that yet remain unsolved. It is to be hoped that the citizens of Medina, Summit, and Wayne counties will give this association all the encouragement and aid possible. Our doors stand wide open, and we invite all who will to come and join us.

Second Report

—OF—

THE DISTRICT HISTORICAL SOCIETY.

—CONTAINING—

All Papers Read at the Last Meeting.

Tract No. 4.

The second meeting of the District Historical Society was held in Akron at the Union Rooms on March 14, 1878. The day opened dark, gloomy, and storming, the rains of the previous few days had already made the roads bad and overflowed the banks of creeks and other streams. Owing to this condition of things, the prospect of a successful convention was very doubtful, as the most of the members would be detained at home. Not until 15 minutes past 11 A.M. did the committee conclude to call a meeting. At that time, President McCreery called the house to order, and the following report of the secretary was read and approved:

To the members of the District Historical Society:

GENTLEMEN:—

I have the honor to present to your honorable body the report of the condition and operation of the District Historical Society from its organization up to the present time.

Pursuant to a call signed by 75 gentlemen of Medina, Summit, and Wayne counties, a meeting was held at Pfeiffer's Hall in the village of Wadsworth, on September 26, 1878, to organize a historical society. The object was accomplished, and the society was ushered into existente under the name of the District Historical Society, including within its territorial limits the counties of Medina, Summit, and Wayne. The constitution and by-laws adopted at that meeting, with a full report of the proceedings has already been before you in pamphlet form, and it will be unnecessary to repoduce it here. Short as has been our existence, we have already accomplished a great deal, the secret of it being that our members are earnest, zealous workers. We have no drones in our hive, and each member does his work in a quiet systematic way. Though all do not work in the self-same channel, yet the results all go to make up the grand total—a better knowledge of our predecessors and original contributions to the knowledge of the world. During our short existence we have brought our society before the notice of various scientific and historical societies of our country. We have claimed our share of their notice and patronage. We have received many kind and encouraging words from the learned men and great workers in the field of archæological science. We have in many instances secured the services and cordial co-operation of those who know best how to bring about the results which we aim at.

The members of the society have already received two pamplets and a partial distribution of a bound volume has already been made, but, owing to the fact that this society has never made any provision to send members pamphlets and books by mail, distribution has had to be made direct to individuals. I would suggest that each member leave with the treasurer the sum of 25 cents, to be used as a postage-fund. By this means the secretary will be enabled to send you books and pamphlets due you as soon as received by him.

Through the kindness of John A. Clark, Esq., of Wadsworth, we have been enabled to issue a sixteen-page pamphlet-report of our first meeting—the first of series we propose issuing. We have others under way and nearly ready for publication, which will be issued as soon as the funds can be raised; and in this connection I would suggest that members make us a donation of all they can afford, to be used as a publication-fund. John A. Clark has kindly permitted us to publish a historical column each week in his paper, the Wadsworth ENTERPRISE, which will be made up into pamphlets, and published at a very small cost. This society is indebted to the Smithsonian Institute for one bound volume; Hon. James Monroe, six bound volumes; Hon. E. S. Perkins, two bound volumes; E. J. Clark, contirbution of a job of printing; T. D. Wolbach, photographs; P. P. Cherry, two volumes and pamphlets; Rev. Stephen D. Peet, pamphlet and papers; John A. Clark, two volumes, printing, and other esteemed favors; and to Hon. E. S. Perkins and Hon. Thomas M. Beer the society is under great obligations, as through their instrumentality the members of this society have each been furnished with

a copy of the Ohio Centennial Commissioner's Report. We are also under obligations to the following papers for publishing our notices: *Orrville Crescent, Medina County Gazette, Medina Democrat, Seville Times, Wadsworth Enterprise, Summit County Beacon, West Salem Monitor, Akron Argus,* and *Wayne County Democrat.* There may be others, but, if so, they have failed to send marked copies, and have missed being credited.

The greatest need we have is money, and it is to be hoped that there are those within our territorial limits both able and willing to provide for our coming explorations. In regard to the state of our finances, I will refer you to the report of the treasurer.

Our membership has not increased as rapidly as we had a right to expect, and we urge all interested in these subjects to come and join us. Our doors stand wide open, and invite all, regardless of age, sex, or position in life, to join us, to place shoulder to shoulder, and, with the force that combined strength gives, press onward toward the goal of our ambition. The whole progress in archæological knowledge, so far, is owing largely to the impetus given by societies—to the coming together of those interested and the union of their resolutions and exertions, and the comparison of their explorations and discoveries. Thus public attention has been awakened, public feeling interested, public sentiment turned and brought to bear.

Respectfully submitted,

P. P. CHERRY.

Wadsworth, March 14.

The Treasurer's report was presented and approved as follows: Total cash receipts, $12.50. Paid out for expenses, $10.40. Balance in treasury, $2.10. Announcement of programme for the afternoon session was made, and the secretary read the following communications:

FRANKLIN, N. C., Dec. 4, 1877.

P. P. CHERRY:— * * * In regard to the age in which the Mound-builders lived, or to what race they belonged, the world is left to conjecture, and no amount of speculation can throw any reliable light upon it. For example, I conjecture that the people who did these ancient works, and who manufactured the numerous stone implements found so widely distributed, did not live since the days of the Toltecs; and yet, so far as any proof is concerned, they may have lived many ages before. But of one thing I am fully persuaded, and that is, that the old mica diggings here date back into a remote antiquity. This persuasion is based upon one fact that stands prominent amongst many. Let me explain: The mica veins which were worked by those ancient people, are veins in which the feldspar has been decomposed, making kaolin. Wherever there happened to be hard bars, or sections, in the veins, they worked over or around them. We have evidence that, since those works were done, the veins have shrunk and settled. The constant percolation of water through the soft feldspar for ages, no doubt, carried away, in solution, some portions of the original volume of the vein, thus diminishing its compactness; then gradually, or through earthquake vibrations, the vein has settled down, and in this settling process the quartz rock, which usually forms a central axis of the vein, caught and folded blocks, or crystals of mica into different shapes. I have some interesting samples taken from my own mine (which is old diggings). Take a sheet of paper and fold it, holding the end to you, and you may form an idea of the crushing and folding together of these crystals. This shrinkage and settling of the vein has evidently been since the old excavations, which let in water freely. When our works reach water-level, we find the veins less soft, and the matter of the vein—the quartz, feldspar, and mica crystals—undisturbed. For several feet below the bottom of the old excavations, which sometimes reached forty feet, I have found crystals of mica which have been, to some extent, altered. The color has been changed, the firmness and elasticity have been greatly diminished, and the whole crystal greatly injured in its commercial val-

ue. This alteration has doubtless been effected by the percolation of alkaline waters, or waters containing iron in solution, in some form or other. But I will not trouble you further. Suffice it to say, that all these facts point to a remote antiquity in which the archæan race did their work. By agreement, I wrote a paper last winter for the Smithsonian Institute on these old diggings, discussing briefly the geology in which the mica-bearing zone is located. It was mailed, but Prof. Henry says it was not received. Either the mails or some amateur in archæology must have dealt foully by me. I inclose you small samples of mica from my mine (old diggings). I write on each with a penknife.

Yours respectfully, C. D. SMITH.

EUFAULA, CREEK NATION,
Jan. 25, 1878.

P. P. CHERRY:—There are many inscriptions in this Territory—enough, I think, to pay a scientist to come here. I have long promised myself the pleasure of examining them, but my duties as missionary have been so pressing that I could not. I have personally inspected but one, an account of which I sent to Dr. Peet, of Ashtabula; but I do not think he regards it of much value, supposing that some ingenious Yankee did it. I refer to the remarkable "Standing Rock" in the middle of the Canadian River, seven miles from here. There were hieroglyphics on it as far back as 1828, and they are still there, though dim and weather-beaten, but look just as they did when first seen by the Cherokees in 1828.

I have promised myself another visit to this rock, as I had no glass with me when there, and the characters are too high to be seen by the naked eye. I shall never more undertake to describe them till I can look at them through a spyglass. There are characters both similar to and different from these on other rocks, at what I regard as old camping places, from 20 to 30 miles apart, including this one, and on a line extending from southeast to northwest, entirely across the Territory from eastern Texas to western Kansas. I have only Indian reports of these, as I have never seen them myself. But I am as sure they are there as I am sure there is an island of Cuba that I never saw. All these rocks, however, are in uninhabited places, and are difficult of access. If there had been thick settlements in their vicinity, my missionary duties would have called me there, and I would have seen them. Some of these characters are described by the Indians as being very curious or singular—the likeness of hands and feet in the solid sandstone, and at one point on North-Fork River there is a rock resembling a pair of scales such as doctors use. It would be difficult to visit these places in winter, as one would have to camp out. I wish to make a specialty of seeing at least some of them in May. I would have seen them long since if I had had means and leisure, but my work has been exacting here and my means scant. I shall be happy to communicate anything to you I may learn in reference to these various inscriptions, and to hear from you at any time.

Truly yours, H. F. BUCKNER.

CHARLESTON, O., Jan 26, 1878.

P. P. CHERRY:—I have measured the mound in this vicinity, according to your directions, and find that the greatest length is from north to south. It measures at the base 150 feet in length and 80 in breadth; between the corner-stones, 65 feet in length and 50 in breadth. Only three corner-stones remain, as the fourth was taken to help build a bridge. They are of the class called "nigger-heads," and would probably cube two feet. There are no signs or characters on them, and they project prominently from the edges of the mound. I can only approximate the hight of the mound, and would say that it measures twelve feet. In form it is an ellipse, and composed of gravelly soil. The top is flat. I bored it in several places with a post-hole auger to the depth of three feet and found n[illegible]v, although the soil of the surrou[illegible]g country is a stiff clay of on[illegible] inches in depth, underlaid wi[illegible] clay hardpan. The ditch, o[illegible] there seems to be more of a sc[illegible]

than a reality, as it is filled with vegetable matter, was a wide canal running close by the east and north sides and opening to two streams. Evidently, the soil taken from this ditch, or, rather, ditches, was used to build the mound. This mound was formerly a favorite place for burrowing animals; and in consequence of the loose nature of the soil many trees have been uprooted, making it very uneven, and impossible to measure accurately.

The owner says that many persons have looked at it, and are unanimous in the opinion that it is an artificial structure. He is willing to have an examination made. His name is J. W. Hatfield, father of Harrison Hatfield, who worked in the carriage shops in Wadsworth for several years.

Respectfully, G. M. Brainerd.

Minerva, O., Feb. 23, 1878.

P. P. Cherry, Esq.:—

You desire a statement of the number of Indian relics in the various counties in the neighborhood. I know of none aside from a few scattering specimens in this neighborhood—other from those belonging to myself, a short description of which I here set forth as you request.

At the head of the list is the *image*, a very poor photograph of which I here inclose.

1 discoidal stone, 4½ inches in diameter, very perfect.

2 ear-lobs, stone.

2 banner-stones, or fine tomahawks.

5 whistles.

3 round stones, used as slung-shot.

1 kidney-shaped stone, use not known to me.

20 grooved stone axes.

18 ungrooved stone axes, or celts.

10 skinning-stones.

22 breast plates, all very perfect.

5 pendants and record-stones.

1 red-stone pipe and 1 round pipe, both perfect.

7 pestles (one of them an ancient pestle, the others Western).

1 specimen of modern Indian carving (somewhat broken).

—Of the flint implements, I have

1 spear-point, 7⅞ of an inch long, and perfect.

1 lance.

40 battle-ax-points.

75 hunting-spears and fish-spears.

2 flint hatchets.

4 knives (semi-lunar)—a number of drills and scrapers, and about 200 arrow-heads.

Some of the flint implements are so peculiar in construction that I do not know their use. As a historical specimen I have a powder-horn having engraved on it the English coat-of-arms, the St. Lawrence River, Forts Niagara and Ontario, the town of Owego, the "Hundert Y Lands," the "Y Land Galot," and dated 1759—no doubt belonging to a British soldier who ascended the St. Lawrence during the first conquest of Canada by the English. The horn tells its own history.

Respectfully,
G. G. B. Greenwood.

The meeting then adjourned until 2 o'clock P.M.

The meeting was again called to order at 2 P.M., promptly, and the following papers were read:

The Modern Evidence of Prehistoric Man in the Copper Region of Lake Superior.

BY HARVEY REED, M.D.

The recent investigations by geologists and scientists of the remains of the workings of an unknown and mysterious race, which existed long before the historian's pen narrated the passing events of his age, are becoming more and more interesting. Mounds and earthworks, which only a few years since were looked upon with an eye of superstition, or perhaps by some of the more inquisitive given a passing notice, are now being rapidly disinterred, and their resurrected contents carefully studied. The facts revealed are rapidly being collected from all parts of the country, and conclusions arrived at as to the character and habits of the *genus homo*, whose home extended from the great chain of northern lakes to the tepid waters of the Gulf of Mexico, and from the fertile valleys of eastern

pre-historic objects. Associated with the remains of man have been found the remains of the rhinoceros, porcupine, and deer. No extinct species have been found, but most of the remains found are those of animals not found alive on the island at present. Stone implements were found of such workmanship as to indicate that, like our own land, Borneo was at one time occupied by a people more civilized and advanced in the arts than those who occupied it at the time of its dicovery by the civilized world.

The same may be said of Australia, lying south of Borneo; and, in fact, the labors of archæologists the world over is bringing to light abundant evidence of the existence of man on the earth for ages longer than was formerly believed and taught.

Prof. Morse, of Boston, who has been pursuing his investigations in China under the auspices and patronage of the Chinese government (and this might be mentioned as an evidence of archæological progress), has discovered, on the coast of China, shell mounds, or "kitchen middings," similar to those found on the coast of the United States from Maine to Florida, and in most of the sea-coast countries of Europe. These are the remains of mighty and long-continued clam-bakes of past ages. Associated with the broken shells are found the stone axes, flint arrowheads, and rude pottery which mark a people but little advanced in civilization. From facts connected with the shell-heaps discovered by Prof. Morse in China, there is abundant evidence that, at the time they were being gradually built up by the refuse from the repasts of the pre-historic man, the waters of the ocean stood several feet higher than at present. But, though the history of China dates back three thousand years before Christ, no mention is made of a change in the level of the ocean during that period.

At home progress is being made in the science. Societies are forming, investigating the mounds, exploring the works of the pre-historic man in the copper-mining regions of Lake Superior. The old oil-wells in Venago county, Pa. — now overgrown with forests, but still retaining the remains of wooden logs used to wall them up with, thus forming immense vats, in which, no doubt, the oil was collected by skimming it off the surface of the water which filled the vats—are being mapped out. The mica-beds of North Carolina, from which the large sheets of mica so often found in the graves of the Mound-builders was obtained, are receiving the attention they deserve. Prof. Hayden's exploration in New Mexico is bringing to light much information in regard to the rock-dwellers who formerly inhabited the cliffs and canyons of that region; and their relation to the present inhabitants of New-Mexico, known as the dwellers in "walled towns," is being traced out.

All this progress and interest manifested by older heads is cultivating a love for the study among the young, many of whom are collecting specimens; and, with all these agencies at work, the great question of man's appearance on the earth — his long and slow journey from the days of stone axes and flint implements up to his present advanced state of civilization and intellectual development — is being slowly but surely answered.

M. C. Reed spoke about a mound at Furnace Run, etc.

The question was asked: "Does there exist hereabout any of the flint from which arrowheads were made.

Mr. Peet spoke of a rude sandstone ax with a hole through the middle which he found the other day. The hole, being large, was bored diagonally.

Dr. Lyder, of Akron, asked that a vote of thanks be tendered the *Beacon* and *Germania* offices, Byrider Bros., and Jos. Bellers for favors rendered. Carried.

At half-past 7 P.M. the meeting was called to order and the society listened to the address of welcome from Prof. I. B. Choat, of Buchtel College:

Had I received an invitation to address a company of gentlemen met for deliberating upon any other matters of local interest than those which are to engage upon your attention to-

day, I should, Mr. President, have declined the invitation however flattering the courtesy might have seemed, for it would not have appeared becoming in myself, who have only a temporary residence in the State, and so slight acquaintance with its present condition as well as its past history, to offer any suggestions as to the objects in which her citizens should interest themselves, or the methods by which they should prosecute their work. But one of the objects of this association, as the invitations show, is to collect and preserve the fragments of the local history of the past. Those fragments of history are nevertheless of universal interest. They pertain to human experience under certain conditions, and can never in the past or in the future be exactly duplicated. They are the common heritage of all who would learn wisdom from the experience of others. Nor will you claim that you alone may indulge an honest pride in the heroism which your early annals may exhibit. That, too, belongs to our country, to our civilization, to the race at large. All human experience has its interest for remotest nations and for remotest times. What I shall say here is just what I would say to the people among whom I have my home. What is proper to be said upon such an occasion in the oldest State of our Union would be as fitly spoken under the same circumstances in the youngest territory

The field before you, gentlemen, is an inviting one. The history of this region dates back to colonial times. Ohio was for years the borders of the English and of the French occupation of America. Momentous interests to all the world were staked upon the issue of that struggle which was carried on upon her soil. Succeeding generations, no less grateful than ourselves that Heaven destined this whole land to be occupied by an English-speaking people, but, softening somewhat of that prejudice with which the order of Jesuits has been viewed, will find in the self-sacrificing labors of those early missionaries examples of heroism which the world has rarely seen equaled. I doubt not that so long as the history of this State shall endure its brightest page will be that which records what I may call its provincial history, and this, too, without indulging any gloomy anticipation that its future is to be in aught dimmed. Byron, speaking of the "good old days," adds the somewhat sentimental yet true remark that "all days when old are good." This will suggest that one of our objects should be to preserve whatever of the present is likely to prove of historic interest, confident that those who are to come after us will have no less of interest in the welfare of ourselves than we have in the fortune of those who have preceded us.

These collections however, are to be made not merely to gratify a curiosity, however laudable it may be. They are to serve as material from which the philosophical historian is to draw lessons of instruction for the civilized world. As it is the duty of such a historian to found his conclusions upon all the facts he can collate, so it is our duty to bring those facts within his reach. Do we think this century needs not the instruction of the past? that our experience will prove a cheaper and a safer guide than the wisdom taught by the experience of former ages? Let the horrors of Plevna and of a winter campaign through mountain passes blocked with snow and rivers choked with floating ice — a campaign of hasty, timid, panting flight, and of hot and close pursuit, remove all doubts upon that point. But it may be suggested that this is an instance of a campaign carried on not according to the rules of warfare among civilized nations. Let us not be too confident that international law has yet secured to neutrals and to non-combatants all the protection they may rightfully claim. Our own recent war would afford too many instances of the violation of such rights; but this is not the place to cite them. If, however, the civilization of this century seems to anyone not to stand in need of the instruction which history would teach, I will direct his attention for a moment to what took place among the most highly civilized countries of Europe

at the very opening of the century. In the early winter of 1799, the French had been driven out of Lombardy and Piedmont, and out of all Italy except the narrow strip of land between the mountains and the coast, extending from the frontiers of France almost to the Arno. Their army under Massena was driven into Genoa, and there beleaguered by the Austrian forces. The city was a wealthy one, and her people had never known what it is to want. Her abundant markets were supplied from every clime, and the loss of crops was felt there only in the fluctuating prices of breadstuffs. Such people realized little of the horrors of a siege, and every consideration attached them to their homes. The lines of investment were closed before many of them had given the matter a moment's thought. The pinching of want was first felt by the poor, but gradually the rich who had never known what hunger is came to feel it all the more severely. The markets were soon exhausted, and the store-houses were drawn upon. But the French troops must have their rations, and the city was in their power. Scarcity soon grew into want, and, before the short winter was over on that coast, want was succeeded by famine. Spring came early, and clothed the hillsides sloping down to the city inside the Austrian lines with brilliant verdure. Every day ladies of rank and fortune visited these slopes, not now attracted by the prospect they afforded, but searching for any herb or plant that could be converted into food. The commonest weed was carried home and dressed for starving children. All that spring and until into June, Death was doing his most terrible work in the city. At length the destitution of the troops forced Massena to surrender, but the surrender came too late to more than twenty thousand of the blameless and the helpless Genoese who had perished of starvation. And yet, through all the winter and the spring that ushered in this century of which we are so proud, and justly, too, the English fleet, day after day and night after night, kept its watch on all that coast, so sharp and close that not a boat or skiff could make its way through the blockade to the famishing city. The English admiral well knew that the Genoese were powerless to compel Massena to surrender. He knew as well that they were dying by hundreds in the city. The tolling of the bells heard across the bay brought to his ears report of death in some noble family, and he waited to hear the knell repeated when the dead should be carried out from a palace to a common grave. Doubtless the hearts of Lord Keith and those who manned that fleet were as tender as they were brave, and if so must have been sorely wounded by what appeared to them to be the unavoidable horrors of war. I can admire the sturdy fidelity of Lord Keith, who without flinching carried out to the very letter the instructions of his government; but I blush for shame — nay, hang my head in shame for myself and for mankind that at this late period in the history of the race international law has not provided that those not bearing arms should have free and safe escort through the lines at any time during the progress of a siege. We may feel that we do not need the instructions of history, but examples like this show that we do need her warnings and her promptings to a better conduct of our affairs.

But your invitation, Mr. President, shows, and this exhibition of antiquities proves, that your researches are not limited to the historic period, that they are to extend beyond and include the study of the monuments of an earlier occupation of this soil. Here, too, the field of study is a fruitful and an inviting one. The remains of our predecessors are numerous and instructive. They prove that this land was the endeared home of a large and powerful nation. The fertility of its soil, the mildness of its climate, the facilities it afforded for transportation and for travel, doubtless secured to this State as dense a population in the prehistoric times as any portion of our country could boast. It was in Ohio, I believe, that these monuments were earliest studied and described. It is for you, gentlemen, to carry forward these re-

searches under the most favorable and most promising auspices. But here I venture to remind you that the field is enchanted ground. When engaged in historic studies, we have the evidence to weigh. We know the character for veracity of the one who gives the testimony, and anything calculated to bias the judgment of the historian is easily discovered. The statements of history can be established upon the strongest moral probabilities. When, however, we go beyond direct testimony, the evidence offered will carry to different minds varying degrees of credibility. It is precisely here that science is exposed to its greatest peril, and that, too, from those of its own household. Science is properly responsible only for what it teaches as known. The theories of scientific men, so long as they are without demonstration, are private property. They must bide the verdict rendered upon the accumulated testimony. If no evidence is found proving or disproving the correctness of the theory, few minds are so constituted as to give it any serious consideration. Now, just as soon as we step beyond the limits of historic ground, a warm imagination quickly supplies material with which to build, and the intense interest of his pursuits leads the enthusiastic scientist to anticipate the results of slow and plodding deduction.

I beg your indulgence for a few minutes to refer to a theory which I call such because I think it still lacks demonstration. I mean the theory of evolution. I do not refer to it here to attempt to prove it true or false, for it concerns me no more whether it be true or false than whether or not the theory of the tides can be proved. I would only remind you of the hostility it has awakened against itself and against scientific pursuits. That hostility is based mainly on the suspicion that this theory denies the truths of revelation—that it denies the existence of a God. Now, it has never yet ventured to deny an Author of the universe. It has simply proposed a method according to which the work of creation might have been carried on. Does this theory imply less of power, of wisdom, or of beneficence on the part of the great Architect of the universe than would that of direct creation? I do not see that it robs God of the glory of one of his attributes. If it be the case that the undevout astronomer is mad, then for a stronger reason is it true that the man who adopts the theory of evolution and yet doubts the existence of God or any of his attributes is absurdly inconsistent. If I were to picture the man whose reverence should be the highest, whose humility should be the deepest, I would imagine him a believer in this theory. I would have him see in the earliest, simplest living forms he can discover—the simple cells which are indistinguishable to his view—some endued with a divine nature which has its laws of growth so ordered and its tendencies so adjusted that it has developed into that power which enables his thought to hold so lofty and sustained a flight; and then I would have him turn in the opposite direction and contemplate that source from which such divinity must have emanated, and there he can not fail to discover an intelligence to the view of which his own attainments, were he disposed to pride himself upon them, would not in comparison distinguish him from that cell to which he traces his origin.

But the object of our study and of our research, that which claims and should receive our entire attention at this time, is *truth*. This has been defined as "anything which one *troweth*." This view is limited to the narrowest scope. It would make the highest standard of truth only that which the mass of mankind troweth or thinketh. Such has been the favorite doctrine of many, but there would be little satisfaction from resorting to the mass of mankind with that question of Pilate's, "What is truth?" We should often find it of that description which Piers Ploughman calls "fals treuthe."

But, supposing the word to be identical with troweth, is there no other intelligence exercised in the planning of a universe and in ordering throughout every part of it that constant succession of events which we style "the

Pennsylvania to the rugged cliffs of Arizona. It is no longer a disputed problem that man existed ages before the era assigned him for his first appearance on earth by the received chronology of the past.

Strange as it may seem, yet the overwhelming evidence of his existence, as manifested by the remains of his labor throughout a widespread region of our land, when investigated by our deepest thinkers and greatest reasoners of the age, and the value of their observations weighed in the philosopher's balance, the results naturally press them to their legitimate conclusions.

Many of the scientific theories advanced at the present day are tainted with the faults arising from the superficial study of themes too deep to be solved with the present development of knowledge, and in reality are only the undeveloped offspring of facts which require more time, diligent research, and deeper reasoning to mature them into a reality. The light revealed by science is doing much for the advancement of the civilized nations of to-day — for us to adopt the language of Humboldt, when he speaks of the scientific discoveries made by modern investigators (the very men who move the world to-day) as being "an assemblage of dogmas bequeathed from one age to another" "by a physical philosophy made up of popular errors." Neither do we dispute the truths laid down in God's holy word, but, on the contrary, we hold that a proper understanding and application of scientific facts only aids in substantiating the realities recorded in the sacred volume; and, where there is an apparent conflict between science and religion, it only proves the fallibility of man, and his need of searching still deeper for undeveloped scientific realities.

To fully elucidate the subject of pre-historic man, and present the comparative proofs, would involve an amount of labor, knowledge, and research that could be given only by those who have at their disposal the time to devote to one of the most fascinating studies of the present day—the pre-historic races of man. The traces left by the ancient copper-miners of Lake Superior, as silent monuments for ages past of their once flourishing condition, are speaking to the people of to-day, through the modern investigators, of the industry manifested by the primeval races, whose remaining works exhibit skill and a marked degree of intelligence, as well as the combined results of multitudes of people whose labors were conducted through centuries of time.

It is maintained by some authors that the greater portion of the inhabitants moved southward through the lapse of years, along whose supposed route of transition they have left a wonderful record of their works, proving thereby an advancement of skill and an increase of knowledge, as indicated by the ancient mounds throughout the United States, and the ultimate achievements in the erection of massive structures in Mexico and Central America. In our opinion, this hypothesis is the result of an overstrain of the imagination, and, when placed on the balance with the light of truth, will be found wanting. Is it not more reasonable to believe that the natural features of the country were as instrumental in developing then as now the wealth of its inhabitants, whose wealth was again applied in the regions where it was naturally concentrated, in the erection of the gigantic structures as found in Mexico and Central America?

The workings of the ancient miners of Lake Superior extended over a district of country comprising what is known as the Trap Range, having a length of 150 miles through Keweenaw, Houghton, and Ontonagon counties, Michigan, and a width varying from three to six miles. On Isle Royal the copper deposits of the Trap Range were worked for a distance of forty miles in length and and nearly five miles in width.

The mining operations of these ancient laborers were crude and primitive, and seem to have been confined entirely to the veins and belts of native metal, which, to all appearance, were the only veins operated, though their are in close proximity copper

ores which show no evidence of having been worked by them. It is not believed that they knew how to reduce metals from their native ores by the furnace and the forge, yet there is evidence in some parts of the country that the aborigines understood the art of obtaining metallic lead from the sulphide, as the form of the ore is readily reduced by simply roasting it in an ordinary log fire.

Their rudimentary knowledge of metallurgy no doubt doubly enhanced the value of the cupric deposits as found on Lake Superior in a pure condition, ready for the manufacture of their ornaments, weapons of defence, tools, and implements—without the necessity of making a chemical reduction from an ore to a metal; for on the shores of Lake Superior the great Creator made provision for the wants of the ancient as well as the modern races, by placing there the only known workable deposit of native copper in the world—the purity of which has gained for it the name of "virgin copper," and to-day outranks all others in the markets of the world. It is along these veins of native copper that the pits and ridges of soil are to be found at the present day. The copper being embedded in trap and amygdaloid rocks, it was necessary to adopt some method by which to disintegrate the rock in order to free the copper. To accomplish this, they built fires on the outcrops of the veins and belts. By heating the surrounding rock in this way, and suddenly cooling it by turning on water, the surrounding rock was partially disintegrated and loosened from the copper, while they completed the removal of the copper by mauling off the adherent particles of rock with the stone hammers. This is attested by the presence in all the ancient pits of large quantities of charcoal and numberless stone hammers, the latter showing marks of long usage. Judging from the depth of these pits we are led to believe that the ancient miners had no knowledge of the artificial and mechanical elevation of water, for the pits were apparently abandoned as soon as they arrived at a depth where the limit of man-power in bailing out the water was reached. When they attained that depth, it is evident that they allowed the pit to fill with water, and commenced another, leaving an intervening partition between the two to prevent the water from passing from a pit already filled into the one in process of being worked. Thus it is that they have multiplied their workings until they have covered nearly the entire copper district with the remains of their primeval mining. No doubt there were other methods of mining practiced which may yet be developed by further investigations, but at present all that has been left and discovered to arouse the curiosity of the modern day are their pits in which are the stone hammers and charcoal. These, with the implements and tools of copper, are the only relics left of the race who toiled for earth's hidden treasures ages uncomputed and unknown. Not a grave, vestige of a habitation, skeleton, or bone has been found. Not even a legend remains among the Indians who inhabited the country when the Jesuit fathers first explored the region of these ancient miners. At that time, the Indians had no knowledge of the existence of copper in the veins, so completely had the lapse of time concealed the cupric deposits from their observations. Knowledge of copper was confined entirely to the so-called "float copper" found in soil or picked up along the shores of the lake, and was—and is yet—held by them as sacred to the name of the great Spirit, and was stored away with the greatest care, and looked upon as household gods; and for an Indian to reveal to a white man the region where it was found was believed to be invoking the wrath of the evil spirit who would destroy them by final dissolution.

The largest aggregation of these ancient pits yet discovered are on what is known as the mining belt on Isle Royal. Here, for a distance of one and three-fourths miles in extent, and for an average width of four hundred feet, the succession of the pits indicates the mining out of the belt to an average depth of not less than twenty

feet. Scattered over the region are millions of stone hammers, many of which are battered and worn, showing evidence of long continued usage. Many of these stone hammers have been grooved by manual attrition in order to enable them to attach handles, making them more efficient and easier manipulated—while a greater number are only unwrought, round bowlders which were merely held in the hand when used.

Near the mouth of the Ontonagon River there is quite an extensive area of ground covered with stone chips and broken and discarded pieces of diorite and porphyry," of which the hammers are principally made, leading us to the firm belief that at some time the ancient race of people operated an extensive manufacturing shop, where they prepared the hammers with which the mines were kept in an abundant supply.

In consideration of the extent of territory over which their ancient mining-works extended, remembering meanwhile the imperfet methods of working the metalliferous deposits, we are naturally led to the conclusion, from the enormous amount of work performed that it undoubtedly required centuries of time and a multitude of people to accomplish it.

Crude and superficial as their methods of mining may have been, the manner in which we find the remaining monuments of their labors bespeaks for them system and order. There is scarcely a doubt but they embraced the advantages derived from the division of labor. There is every reason to believe that there were miners, wood-gatherers, bailers of water, and men whose duty it was to make and repair the tools, while others gained a livelihood by searching along the shores of the lake for the water-worn bowlders of diorite and porphyry, which was transported to the factories, there to undergo the necessary preparations to fit them for use in the mines. Others were no doubt employed to carry the products of the mines to the coppersmiths, whose business it was to work it into axes, knives, chisels, fleshers, spears, daggers, arrowheads, awls, needles, and bracelets which have been found in modern times scattered over the entire district inhabited by this mysterious race. There is scarcely a doubt that the copper from which these tools were made came from Lake Superior, for that was, and is yet, the only known native copper-deposit of note on the American continent—excepting mere traces which are not worth working at the present day, and give no evidence of ever having been known or worked by pre-historic man. True there are large and immense deposits of copper ore scattered through Arizona, New Mexico, and Central and South America, but, as previously stated, their knowledge of metallurgy was not sufficient to reduce an ore into a metallic form, hence these deposits show no evidence of ever having been worked or utilized in any way by these ancient people.

The aboriginal miners made few mistakes in their location of a mine. In almost every instance where prehistoric man carried on extensive works are found the rich mines of modern times. So universally has this been the fact that many miningmen of to-day believe that they were gifted with some lost art or mysterious knowledge by which they were enabled to discover and trace out the rich veins of mineral copper, or follow the productive lodes.

The aborigines showed no mean skill in the art of manufaturing the various weapons, ornaments, and tools employed by them during their prosperity. These are supposed to have been beaten out by them with the stone hammers, and fashioned to suit their taste without smelting or moulding.

Not unfrequently tools and implements have been found in which are spots of pure silver. This fact serves as strong evidence against the theory advanced by some writers that these implements were moulded, for, had the silver and copper been melted together, they would have at once formed an alloy, and the small amount of silver would be lost to view. It is a common occurrence to find silver and copper completely welded together in the mines to-day, without the least

degree of alloy, which fact alone stands among the leading arguments in favor of the electric theory of the metallic deposits of native copper as found on Lake Superior. With the present development of science there is no known process except by the action of electricity which will effect a perfect welding of copper and silver each in its virgin purity without forming an alloy of which I have perfect specimens in my cabinet. Knowing this to be true, we are lead to the conclusion that the aborigines must have either beaten the metals out in the desired forms in a cold condition, or else they were acquainted with some method of welding silver and copper without effecting an alloy.

Many of these copper implements have certain raised marks on them, which some investigators claim to be due to moulding; but it is generally believed to be due either to unequal oxidation of the metal or the result of imperfect fabrication. Of all that has been found in the mounds of primeval man, not a single evidence has yet been discovered, and reported to my knowledge, of anything like a crucible. This, in connection with many other arguments against the theory of moulding leads us to the conclusion that their knowledge of the art of metallurgy was limited entirely to the working of the native copper as found in the veins of the copper-regions of Lake Superior—the ductility of which readily enabled them to beat it into the desired forms without the aid of heat. An examination of the results of their primeval handiwork, as manifested in the tools recovered at the present time, calls forth amazement at the perfection of workmanship as well as the identity of form as compared with the implements of like purpose of modern times. The sockets of the spears and chisels are in all instances formed as symmetrically and perfectly as if executed by a smith of the present time. The discovery of these copper implements, mingled with the relics of the Mound-builders of America, sets the pre-historic men of the western continent pre-eminently in advance of men of the Stone Age in Europe. It is an accepted fact that man in the Stone Age existed contemporary with the Siberian mammoth and rhinoceros. But why should scientists hesitate to assign the Mound-builders a place contemporary with the mastodon and mammoth of the western hemisphere?

Foster says: "One of two suppositions is true—either that here has been an intermingling of the relics of two distinct ages, or that, if the synchronism be established, man on this continent, as a contemporary of the mastodon, was far in advance in the mechanical arts of man as the contemporary of the fossil elephant on the European continent."

Although foreign to many of the adopted theories of to-day, may we not, without overstraining the imagination, advance the idea that prehistoric man existed here as a nation, and carried on trade with the various parts of the country, similar to the present day, exchanging the commodities of the agricultural districts for the copper of the mining-regions, and so on in all the departments of their trade with the various localities of the land? There is every reason to believe that agriculture was then, as it now is, among the leading pursuits of the nation. In proof of this, we find their mounds reared over the leading and most fertile portions of America.

The fact of the copper implements being found in a greater or less abundance throughout the entire range of the Mound-builders shows the extent of their civil trade and approximately their estimation of the native metal. Copper and silver being the only metals found to any extent among the relics of these ancient people, and only known in a metallic form in the mines of Lake Superior, must have given to it a monopoly value.

The uniformity of shape in the same class of implements found in different parts of our land leads us to believe that the people lived here as a nation, and worked in harmony, for the remains of these implements are found in countless numbers, disseminated over a vast extent of territory, show-

ing thereby that multitudes of people must have lived on our continent at some pre-historic period, and used these implements in the pursuit of their various occupations. Their works give evidence of a certain degree of intelligence and industry: and no doubt their combined labors accomplished the accumulation of considerable wealth, which is attested by the remains of massive structures throughout portions of our land.

We are not disposed to believe they were more peaceful during their day and generation than the average sinner of modern times, which some authors seek to maintain for them. The very fact of finding war implements such as spears, daggers, and arrow-heads implies that they were prepared for hostilities, and no doubt needed only a favorable opportunity to develop their powers of combat. It is already conceded by the best authorities that the Mound-builders were driven out of existence by their assailants, and, while under the sway of a nomadic and warlike people, their agricultural pursuits were abandoned, and the cultivated fields allowed to run to waste, while the activity in the mines was terminated, and their ancient works left to moulder and decay.

"Thus the Mound-builders of the Western Continent have been the precursors of the present race of people who are to day occupying the same territory and repeating the same occupations, only more perfectly as guided by the light of modern science, which is capable of making the territory once occupied by the Mound-builders of the Stone Age the great grain and mineral producing country of the world, as well as the center of governmental power.

Col. Whittlesey said that the gentlemen treated the subject very fairly. He said that eleven years ago he spent the summer on Lake Superior, and that the richest mine was discovered by a nugget of copper of the Mound-builders. McCreery also spoke of a large block of copper, in the Smithsonian Institute, and a tradition thereof.

Some other discussion took place, during which the question of extinction was taken up. Mr. Thomas Rhodes asked if we had not Indians now who were as far advanced as the Mound-builders. Dr. Jewett replied that he thought the Indians of California were as far advanced, but thought the Mound-builders had been very numerous. M. C. Reed said that if the Mound-builders were agriculturists they had the forest-growth to contend against and wild, wandering tribes who had no fixed abode.

Dr. Jewett asked if the Mound-builders had no iron implements. Col. Whittlesey replied at some length, stating that he thought that the Mound-builders occupied the southern portions, and spread north in small colonies, to be driven back by wild tribes.

M. C. Reed admonished the members to not allow tampering with the works by curiosity-seekers.

A motion was made that the papers which had been read be placed on file with the secretary. Carried.

Dr. Lyder asked if there was any evidence that the Mound-builders occupied the zinc regions of Pennsylvania. McCreery replied that stone implements were found there.

Stevenson asked Col. Whittlesey if the stones he spoke of as spindle-stones were the same as those called nutcrackers by Dr. Jones.

Col. Charles Whittlesey then spoke. He also exhibited a large chart of the works at Newark, which he had surveyed a number of years ago, but gave only a brief glimpse at his great work in the cause of archæological science. The society then listened to a paper from James M. Stevenson—"Evidence of Pre-historic Occupation of Summit County." T. D. Wolbach was then called to the chair, and the president read a paper.

ARCHÆOLOGICAL PROGRESS

As president of the society, it seems proper that I should endeavor to give a *résumé* of the progress being made in archæological discovery in various parts of the world; and, in glancing as briefly as may be at the various

fields now being explored, prominent and foremost are those of Dr. Schliemann, at Mycenae. Dr. Schliemann claims that his present excavations on the plains of Hissarlik are on the cite of the ancient Troy, rendered classic by Homer's Iliad. If this be so, he is now disclosing to modern view the ruins of the city to which Paris (son of Priam, King of Troy) carried fair and fickle Helen, the wife of Menelaus, King of Sparta. This elopement or abduction caused the Trojan War, including the siege of Troy, lasting ten years, resulting in its capture by stratagem and total destruction, B.C. 1184.

There is so much mythology woven in the Iliad that by most readers all is counted mythical. But patient research is showing that the framework at least was grounded on fact. The first discovery of the sight of ancient Troy was made by Lechevelier, who in 1785 discovered the two springs mentioned by Homer as flowing side by side, the one cold and pleasant—the other almost at the boiling-point. The first mention during the present century was in 1708, when the governor of Peloponessa made some excavations near the springs, and announced to the world the exact site of the city. But archæology had not then reached its present honored position among the sciences, and but little interest was felt and but few important discoveries made—and it was reserved for Dr. Schielmann to bring to light the wondrous city of ancient times and make discoveries which may go further toward settling some of the mooted questions of ancient and modern history than any one archæologist has ever accomplished.

The city was surrounded by a wall which tradition says Neptune himself assisted in building. Within the Walls, and occupying the highest point of land, was the citadel, containing the king's palace and the temples of the gods, and called the Pergamum. From the top of this acropolis, Hecuba, the wife of gallant Hector, saw him fall by the hand of Achilles, and his body dragged round and round the city walls by the slayer. The latest explorations of Dr. Schliemann announce the discovery of the ruins of the Pergammum, together with articles of gold—breastplates, shields, sword-hilts, goblets, and various articles of jewelry—all of beautiful design and exquisite workmanship, evincing a degree of civilization and progress in the arts which does not correspond with our ideas of what a nation would be who peopled the streams and woods with nymphs and divinities—to whom the mountains were the abodes of the gods, the clouds his chariot, and the the thunders the echoes of his voice.

Important discoveries have also rewarded the explorations of Dr. Augustus Le Plongeon, in Yucatan, where he has unearthed an immense statue, nine feet long, and weighing, with the base on which it rests (the base and statue being cut from a single block of stone), over three thousand five hundred pounds. The figure is in a reclining posture, and from its massive size and majestic mien, is believed to be the likeness of some king or hero, the general shape of the head and features resembling the figures on the monuments of Mexico. It was found in a vault, or mausoleum, at the depth of thirty feet below the present surface of the land. And the figure of a lion, also carved in stone, found near by, is supposed to have adorned the roof of the vault. The image, statue, or whatever it may be, has been deposited in the national museum in the city of Mexico. These remains are supposed to have been the work of a people who inhabited the country previous even to those who occupied it at the time of the Spanish conquests—a race of people who are believed by many archæologists to have been the ancestors of the people who inhabited North America previous to, and were driven out or exterminated by, the more warlike Indians. Many of the stone implements, pottery, flints, etc., correspond exactly with those found in Central America and the Mississippi Valley.

On the Island of Borneo, A. H. Everett reports the discovery in numerous caves of large quantities of

the peculiarities of the mouth mentioned above. In the collection contributed by Peter Neff, of Gambier, Ohio, was a stone face of very great interest, rudely carved in the sandstone, which was turned up by the plow in Coshocton county, and of which photographs and casts have been distributed by him. The stone is nearly flat, and of an oval form, except that there are two peculiar prominences, or horns, at the top. George H. Miflin, of St. Louis, has described to me a similar face, about 1¼ inches in length, neatly cut from purple fluor spar, and taken from a mound in Mississippi county, Missouri. It differs in form from the preceding only in having one horn, or projection, rising from the top. These projections are of such form as to indicate that they were not symbolical or ornamental, but were designed merely for supporting the object by means of a cord tied to them.

In Vol. IV. of Bancroft, pages 317, 318, 329, are three figures of sculptures and reliefs from the ruins of Palenque, representing men with elaborate headdresses, surrounded with inscriptions, in two of which the human face is a conspicuous character. The figures are each sitting in oriental posture upon a double-headed animal. In these sculptures, the human face, of the form of those described above, occurs five times — twice suspended on the breast of the man by means of a string of large beads, and three times from the neck of the double-headed animal upon which the figures sit. One of the men has suspended in like manner upon his chest an object of similar size, with an ornamental border, and inscribed with the taw cross. Many of these figures occur in the work, showing a similar use of the image of the human face. Now, the large stone beads which are so common in Ohio would be very burdensome from their weight if used merely as ornaments on ordinary occasions. But a string of them attached to this stone face from Coshocton county would make precisely the ornaments worn by these sitting figures, which probably represent priests or princes sitting in state, or, it may be, effigies of the gods. They certainly pertain to some of the ceremonial observances of the people, and these beads and faces are certainly very significant links in the chain of evidence sought. Not less significant is the piece of a "tally-stone" in the collection of Dr. H. H. Hill, of Cincinnati, which he informs me was obtained near Big-Bone Lick, in Kentucky. It is covered with rows of small symmetrical circular cavities, arranged in fives, with a row of larger cavities along the line of fracture, leaving the system of grouping of the larger cavities uncertain.

Specimens of picture-writing, as the Codex Mendoza, representing the education of Aztec children, and the paintings illustrating the Aztec migrations show conclusively the use by the Aztecs of the same system of notation, by fives, and the same mode of keeping a numerical record.

The Cincinnati inscribed stone, the authenticity of which may now be regarded as established, bears a striking resemblance to inscriptions found in Central America. It is not alphabetic and apparently not hieroglyphic. Its bilateral symmetry indicates that it was wrought purely for ornament, but with a painstaking care, indicating its great importance in the estimation of the artificer. Speculations as to its use are unnecessary here, for its value consists in the evidence it affords as to the use of similar ornamental designs by the Mound-builders and the people of Central America.

The engraved circular stone belonging to W. Marshall Anderson, of Circleville, obtained from the State of Mississippi, and contributed by him to the Ohio exhibit, represents two rattlesnakes with monster heads, and teeth of carnivorous animals so entwined as to cover the whole face of the stone. The frequent occurrence of the rattlesnake on relics that unmistakably pertain to the Mound-builders, coupled with the fact that in the symbolical writing of the Aztecs the rattlesnake represents royalty, suggests the probable significance of the inscription, and the frequent occurrence of similar designs in Cen-

that America indicates the close affiliation of the two people.

The pottery of the mounds is often much superior to that of the modern Indians, and resembles that of Mexico and Peru and that of the Cliff-dwellers of Colorado. In the great variety of earthworks on the alluvial plains, are many mounds similar to those dedicated to the worship of the sun in Mexico, and some of the extensive embankments, like those of Newark, composed of brick clay resting on sand and alluvial, are said by careful observers to disclose in the center the form of the sun-dried bricks of which they were built. These, now reduced mainly to a homogeneous clay, indicate the great age of the works. All these facts warrant the conclusion that the Mound-builders, the Cliff-dwellers of Colorado, and the native civilized inhabitants of Mexico and Central America, were of the same race, and that, in studying the characteristics of the latter people, we are learning to know the builders of our mounds.

At the time of the conquest of Mexico and Peru, the Spaniards came in contact with a native American people much their superior in civilization and moral culture. They found thoroughly-organized communities, with kings, orders of nobility, plebeians, and slaves; a priesthood with imposing rites and ceremonies—with monasteries of monks and nuns; schools and colleges supported by the state; compulsory education of the youth, in industry as well as in science; regular armies with fixed rules and articles of war; hospitals for the sick and homes for disabled soldiers; a system of laws as complete and extensive as was then known in Europe; professional lawyers and an organized judiciary, with a gradation of courts, the judicial purity guarded by the penalty of death for a corrupt or drunken judge; a system of roads connecting all parts of the country, with trained couriers and courier-stations, at an interval of each six miles, for carrying the mails; magnificent cities with regular streets, palaces, and temples; the public grounds and botanical and zoological gardens ornamented with fountains and artificial lakes; regular systems of water-works, with aqueducts built of stone; streets lighted at night, and guarded by a regular patrol force; markets in which from 50,000 to 150,000 could assemble at once; all the principal houses of the city furnished with baths and those of the nobility with furniture of more than oriental magnificence. They found schools of law, medicine, oratory, poetry, music, and art; men of rare skill in working in stone, wood, gold, silver, copper, tin, lead, and bronze—of the latter making cutting-tools scarcely excelled by steel; the manufacture of leather, paper, paints, and dyes. They found the fortifications of the cities illustrating the highest skill in military engineering;—and the whole country under thorough cultivation, exhibiting more skill than at that time was found in any other part of Europe. Ponds and lakes were artificially stocked with fish; poultry, including turkeys, quails, geese, ducks, and many other birds, and a domestic animal resembling a dog was generally raised by the common people, and the parks of the nobles were stocked with deer and hares. Of our ordinary domestic animals they had none, and knew not the use of iron. With the advantages of herds and flocks, of beasts of burden, and steel and iron tools, they would, if undisturbed by foreign intrusion, have been in this continent what the great Aryan race was in the old—the great civilizing and subjugating race of the continent.

It remains to inquire whether there is any evidence tending to show any connection between this pre-Columbian civilization of America and that of the Old World. If we resort to an examination of the recorded myths and legends of the creation, of the flood, etc., etc., we shall find a great diversity in them, and, in many instances, a striking similarity between these and the European and Asiatic myths, and the Mosaic accounts of these events. But it is so difficult to separate what is original in them from what has been borrowed from their foreign visitors, and what has

been infused into them by the narrator, that it seems best for the present to eliminate this part of the evidence as probably, or at least possibly, untrustworthy, and to search for evidence not open to this objection.

In the earliest records of northern Asia, we find the people living in what they called cities and villages, but having little resemblance to modern towns. They were inclosures for the protection of communities of agriculturists, indicating social habits and domestic pursuits much like those of our Mound-builders.

In a compilation of Gentoo Code, made by native scholars from their most ancient writings, when Warren Hastings was Governor-General of India, may be found the following descriptions of their cities and villages, and the law governing the culture of land, in their vicinity:

"Wherever men of the tribe of Sooder and husbandmen are very numerous, and where there is much ground fit for tillage, such place is called *gram*, or a town."

"A place that hath eight *cose* (a measure of nearly two miles) in length and breadth, and in the skirts of which, on all the four sides, is a ditch, and above the ditch, on all the four sides a wall, or parapet, and on all the four sides of it are bamboos, and on the north side thereof a hollow or covered way, such place is called *Nigher*, or a city. In the same manner, if it hath four cose in length and breadth, it is called *Kheet*, or a small city, and, if it hath two cose in length and breadth, it is called *Gherbut*, or a smaller city." * * *

"In each of the four sides of a town they shall leave four hundred cubits, and from thence commence their tillage. And on each of the four sides of the city they shall leave sixteen hundred cubits, and from there commence their tillage; and on each of the four sides of a small city they shall leave twelve hundred cubits, and from thence commence their tillage; and on each side of a smaller city they shall leave eight hundred cubits, and from there commence their tillage; and within this space above specified no tillage shall be made."

Then follow minute descriptions in regard to animals trespassing upon the crops, etc.

In another part of the same volume we have a description of one of the inner works of such a town or city, an inner stronghold for the use of the magistrate, which reads as follows: "The magistrate shall erect a strong fort in the place where he chooses to reside, and shall build a wall on all sides of the fort, with towers and battlements, and shall make a full ditch on all the four sides thereof, and shall have water near it that, at the time of necessity, when the water fails in all the *nullahs* (brooks) the ditch may be completely full, and he shall plant trees within the fort, and he shall have within the fort many troops of horse, and fort to guard the same, and great store of arms, and much money, and many things of all kinds, and stores of victuals and drink, and horses and elephants and camels and cattle and all beasts of burden in great plenty, and he shall keep there great stores of hay, and many *Bramins* and painters and smiths, and all other kind of artificers, and all sorts of musical instruments also shall be kept in the fort; and he shall cause great pools to be made. It is understood that there should be store of all kinds of things laid up within the fort, that there may never be complaint of a want of anything."

These inclosures, called towns, cities, and forts are unlike anything in modern times designated by these names; and, if abandoned until the ditches, embankments, and mounds were all that remained to mark their sites, we should expect just such remains as in America are attributed to the Mound-builders. They disclose to us also in ancient India just such agricultural communities, resorting to such modes of defense against apparently more warlike and barbarous neighbours, and disclosing the characteristics we attribute to the Mound-builders from the study of their works.

If we would compare the religious cultus and symbolism we find, appar-

ently originating in India and unconsciously preserved in the language, customs, ceremonies, vestments, ornamentation, etc., of all branches of the great Aryan race, two forms of the development of the religious impulses, so blended as to make it somewhat difficult to determine which has priority in time, and whether one of them is or is not a development of the other—Sabianism and the religion of sex—the latter probably first, and the former a development from it. Both of these are so natural to untaught man that the common presence of each or either can hardly be taken as evidence of ethnic relationship; but a comparison of the ceremonies and symbolism of each may lead us to not untrustworthy conclusions.

From the first of these comes that figurative or symbolical use of white and lightwhich makes them expressive of purity, virtue, and truth, and night and darkness of the opposite characteristics. We are so accustomed to use these terms with these significations that it does not occur to us to inquire why we use them; but it is doubtless because our ancestors, without any figure of speech and without any conscious symbolism, found in the physical source of light the God they worshiped and the origin of all they accounted beneficent and good. From it also has been developed much of the mythology and folk lore of Europe, funeral customs, and many religious festivals, especially of the Catholic Church. As survivals from the other, we have the vestments of the Catholic clergy, their conventional form of holding the hands in pronouncing a blessing or benediction, traditional form of cakes and confectionery, the symbols of most of our patriarchs, and very much of our conventional ornamentation which to us has no meaning and the original significance of which is appreciated only by the student of the symbolism of this ancient faith. The figures upon textile fabrics, the ornamentation of churches, and public halls, are subjects of exceedingly interesting study to one who has a clue to the significance of the figures, and are good illustrations of the tenacity with which old forms are retained after their significance is utterly forgotten.

The disguised symbols of this ancient faith, such as the cross, the stone pillar, the maypole, the spire, the triangle, the circle, the oval, the trefoil, the pine-cone, the palm-leaf, etc., etc., are now either without significance or have their significance wholly changed by the introduction of a new faith and new ideas. Some of the most gross symbols were retained to a late day, but written history does not go back to the time of the general substitution of a more modest and chaste symbolism.

The symbols of both these forms of religious faith are abundant in American pre-historic remains, but, with a few exceptions, the conventional symbols of the religion of sex so abundant in European civilization, are either wanting or take unorganized forms.

The cross was one of the earliest of these symbols. It signified life, or the source of life, the nude Creator, the divine triad. It is found in the earliest traces of civilization in India; in the remains of Etruscan art among the earliest of the Egyptian hieroglyphics; in the earliest attempts at a written language; and in the alphabets of all the Aryan nations, and in one form or another is the signet or symbol of all the Aryan races. Various other symbols represent this divine triad, and others the divine unit, the two combined representing active creative power or the conjunction of these two divine elements, the divine Arba-il or sacred four of India. Some of these combined symbols are the cross with an oval or circle, the sun and moon in conjunction; the serpent creeping up on the body of the sacred tree or grave; the pillar and circle, also represented by a dot and circle; the triangle and circle; and the square, or equilateral rectangle as alone representing the sacred four.

The more gross symbols of this worship are abundant in the pre-historic remains of America, and of the more softened emblems the cross and the serpent are frequently found, and in such positions as to clearly indi-

cate their use as symbols of some object of worship.

But, from this alone, we are not warranted in the conclusion that the same significance was attached to these symbols in the two continents. But, when we find figures of the sun and moon in conjunction, the cross combined with the oval, a frequent figure in the hieroglyphic writings, and on the personal ornamentation of effigies of priests or gods, the dot and circle (still reverenced by the Mason's fraternity) a conspicuous ornament everywhere, the inference becomes a very probable one that the same signification was attached to these symbols here and in the Old World. Other evidences of the use of the same symbolism are not wanting. The crescent-shaped ornaments of stone, polished with great care and made of metamorphic slate, which seems to have been especially selected for objects of ceremonial use, are very abundant in Ohio and elsewhere. The uses for which they were designed has been one of the standing puzzles of American archæologists. But, among the Aryan races, the crescent was everywhere a symbol of this old faith, representing the unit, or female creator; and F. Layard, in his *Culte de Vénus*, figures an ancient bas-relief in Anatolia, in which this goddess bears, in one of her hands, a staff surmounted by the crescent moon, precisely such a symbol as would be formed by surmounting a staff or wand with one of the American stone crescents.

Allusion has already been made to the effigies of priests or gods found in Central America, seated in oriental postures upon double-headed animals with a human face suspended by a string of large beads, and resting upon the chest. In Inuman's Ancient Faiths, Vol. II., page 645, is a remarkable figure copied from Plate 34, Fig. 1, of Moore's Hindu Pantheon. "It represents," says the author, a subject often depicted by the Hindus and the Greek, viz., androgynism, or the union of the male and female in one person. It is a human figure of which the right side is male and the left female, standing in front of a double-headed seat like those described above, the right head that of a bull, the left that of a lioness. A long necklace ornaments the figure upon the male side, composed of human faces—upon the female side, of large beads. The resemblances are too many to be the result of accident, and it is difficult to find any explanation of these resemblances, except that they have their origin in a common religious cultus. It may be added here that No. 3335 of Schliemann's photographs represents a human figure with a head suspended upon the breast, and in Grecian reliefs Athene is represented with the head of the gorgon thus suspended. This double-headed seat, or throne, was a device not uncommon on the shields of the German and Celteberian auxiliary regiments in the service of the Romans, which also often bore as devices the symbols of this ancient faith, though, from the character given these people by Tacitus and Cæsar, it is probable the significance of these figures had been forgotten, and that they were then merely conventional or traditional ornaments.

Additional light is thrown on the question by an examination of the ancient forms of pottery. The potter's art is a curious study. Specimens are found which indicate the use of baskets of bark, twigs, and braided straw, into which the tempered clay was plastered, and afterwards dried and burned. The ornamentation of pottery manufactured after these aids were dispensed with being often an imitation of the markings thus unintentionally given which a natural conservation fixed the orthodox style. Some fine specimens of Prof. Hayden's collections from Colorado very clearly indicate that they were formed in grass baskets braided and sewed after the manner of making straw hats. In the ordinary forms there is much similarity. Bottle and water-coolers from the mounds, from Colorado, Mexico, Peru, Africa, Europe, and Asia, may be seen of substantially the same form as was preserved to us in the glass whisky-bottles of forty years ago. These are so accurate models of the gourd with a straight

neck as to make it very probable that this form was derived from the previous use of the gourd, and indicate only the general use of this vegetable bottle provided by nature.

The terra-cotta drinking-cups with double handles exhumed from the site of ancient Troy and the highly ornamented drinking-horns used by the Romans and throughout Europe, are illustrations of the manner in which old and inconvenient forms are reproduced in new materials — in this case the name of the cup and the slang term for its contents — "taking a horn" — preserving the name of the old material; and the practice still preserved in various places in drinking bouts of reversing the cup when put upon the table as evidence that it is fully drained, being a practice derived from the use of veritable drinking-horns which could stand only in that position. The double handles on the ornamented and mounted horns was a necessity to enable them to be conveniencently passed from the attendant to the drinker, because the filled horn could not be placed on the table or carried upon a server. These double handles were retained in the terra-cotta cups of the Trojans and on the beer-mugs of the Germans. In America similar double-handled cups were made of pottery when there was no domestic animal capable of furnishing materials for real drinking-horns.

There is another form of pottery so singular,—the reason of which is so difficult to imagine,—as to render it probable that it had a symbolical meaning which is now lost—the double-bodied jugs, or bottles, or pitchers found in Central America, Peru, and Guiana. They are altogether unlike anything preserved in European art; but on plate 104 (fig. 2298) of Schliemann's photographs of the relics from Troy is the representation of a very similar vessel. It differs materially only in the long upright lips at the two orifices, which is characteristic of so much of the Trojan pottery. The evolution of this form and its connection with the symbolism of this old religious cultus is clearly indicated by figures 10 and 11 on page 402 of Cesnola's charming description of his discoveries at Cyprus, one of the more modern seats of this worship. The piece of pottery represented by figure 10 is the original of the double-mouthed and ultimately of the double-bodied vessels of pottery, and the two figures together indicate that the partiality for the human form shown by the workers in ancient pottery, in which the distinctions of sex were so plainly marked, had its origin in this worship—a partiality equally apparent in ancient American art, and leading to the manufacture of similar forms.

That these Trojan finds do not represent mere accidental resemblances is rendered more apparent from the fact that we there find so many other forms similar to those in America. The discoidal stones in our exhibits, which puzzle us so much, which were perhaps used in some game, but more probably as spinning-rests and whorls, are repeated in form in large quantities in terra-cotta. The same forms of perforated stones and large beads are abundant, both in stone and terra-cotta, and the holes drilled in the pottery and the stone are made precisely in the same manner as in the polished stone implements which are here so abundant.

As an outgrowth of the religious cultus, to which reference has been repeatedly made, in Egypt and in India the supreme creator was represented as a triad; the number three became a sacred number, and whatever was perfect was regarded as triune. From the union of the triad with its complement, or the unit, four also became a sacred number, and as an outgrowth of the same cultus, myths were abundant of virgin-born gods and heroes, and baptism with water was practiced as a symbol of regeneration, and called a new birth. These are all exactly repeated in the religious ideas of Mexico and Central America. The presence of these ideas, and the use of the cross as a sacred emblem, and other similar facts—especially the Mexican legend of the incarnation of the only son of the supreme deity, who was thus both God and man, who descended to the earth

course of Nature"? "For my thoughts are not your thoughts, neither are my ways your ways, saith the Lord. For as the heavens are higher than the earth, so are my ways higher than your ways and my thoughts than your thoughts." Thus is the standard of truth fixed in the knowledge of God, and not in the fickle sentiment of the human understanding. What He troweth will be learned as we discover the expression of His thought in the works of His hands and in the teachings of His word; and we have this by which to recognize truth in all things, that wherever we may meet it, whether in the material or in the spiritual world, it will always be found to bear the impress of the Divine.

The following article on the "Ethnic Relation of the Mound-builders" was then read by M. C. Read:

If we seek to determine the ethnic relations and character of the Mound-builders of North America, we are compelled to rely solely upon the evidence furnished by the remains of their structures, and their contents, and to surface finds, which, the contents of the mounds teach us, should be referred to the same people. If these suffice to connect them with any other American tribes, who have been brought in direct contact with modern civilization, and in regard to whom we have much accurate information, it may be possible to determine their relationship to European or Asiatic peoples if such relationship exist.

But a proper use of this evidence requires that we should first eliminate all the facts which have their probable origin in the wants and characteristics of a common humanity, and in the character of the materials with which savage men would be compelled to work.

Structures and forms of implements which are found everywhere, and which we can see that a savage race would be sure to construct if the materials for them were available, without instructions from others, are of no value as evidence.

Circular works of earth or of stone are of this character. Much importance has been attached to the evident proclivity of the Mound-builders and of the Cliff-dwellers of Colorado to the circle, without reflecting that this is the primitive form of structure everywhere—the most natural and the most easily formed. When children attempt to build snow-houses or inclosures of stone or earth, they always commence with the circle. A straight line would lead them away from the point they wish to inclose, and they instinctively place their materials in the form of a curve, and, without measurements, will make a very accurate circle; and, when they learn the advantage of plaiting beforehand their proposed structure, a circle is more easily formed than any other regular figure. So long as earth, unwrought stone, or palisades are used, the circular inclosure is the natural form of structure, and not until dressed stone or timber cut in lengths and laid horizontally is used will there be any tendency to build in the form of squares or parallelograms. After the circle has been consecrated by custom and the practice of religious rites, that conservatism which regards an old form as orthodox will create a strong tendency to retain it, especially for sacred or ceremonial uses. This conservatism carried into the iron age the practice among the Romans of killing with a stone animals devoted to the gods, and with the Jews the use of flint knives for certain ceremonial purposes.

It is no cause for surprise that we find the circular form of structure adopted everywhere by primitive races. The earliest works of the Greeks and Romans, the pre-historic structures of Britain, central and northern Europe, the huts of the Esquimaux, the kraals of the African tribes, the wigwams of the American Indians as well as the huts of the beaver and muskrat, are illustrations of this unthinking use of the circle—a form not selected, but assumed, like the ant-hills and the nests of birds, because the materials take this form most easily, and no thought has suggested any other form

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Circular works of earth or of stone are of this character.[1] Much importance has been attached to the evident proclivity of the Mound-builders and of the Cliff-dwellers of Colorado to the circle, without reflecting that this is the primitive form of structure everywhere—the most natural and the most easily formed. When children attempt to build snow-houses or inclosures of stone or earth, they always commence with the circle. A straight line would lead them away from the point they wish to inclose, and they instinctively place their materials in the form of a curve, and, without measurements, will make a very accurate circle; and, when they learn the advantage of plotting beforehand their proposed structure, a circle is more easily formed than any other regular figure. So long as earth, unwrought stone, or palisades are used, the circular inclosure is the natural form of structure, and not until dressed stone or timber cut in lengths and laid horizontally is used will there be any tendency to build in the form of squares or parallelograms. After the circle has been consecrated by custom and the practice of religious rites, that conservatism which regards an old form as orthodox will create a strong tendency to retain it, especially for sacred or ceremonial uses. This conservatism carried into the iron age the practice among the Romans of killing with a stone animals devoted to the gods, and with the Jews the use of flint knives for certain ceremonial purposes.

It is no cause for surprise that we find the circular form of structure adopted everywhere by primitive races. The earliest works of the Greeks and Romans, the pre-historic structures of Britain, central and northern Europe, the huts of the Esquimaux, the kraals of the African tribes, the wigwams of the American Indians as well as the huts of the beaver and muskrat, are illustrations of this unthinking use of the circle—a form not selected, but assumed, like the ant-hills and the nests of birds, because the materials take this form most easily, and no thought has suggested any other form

Again, place man with his native wants and impulses, ignorant of the arts and appliances of civilized life, where he must struggle for subsistence with the forces of nature, with wild beasts, and with men as savage and untaught as himself. His first weapons may be clubs and stones, but those which will be wrought into new forms, and be preserved for our inspection, will be formed of some hard stone, whenever it can be found, which is capable of being wrought into forms adapted to his wants; and, in default of this, other similar material. Flint, chert, obsidian, any stone which will chip easily to a sharp edge, will constitute his first cutting instrument, and is much better adapted to this use than we are wont to suppose. Some of the modern California Indians make use of the most primitive form of these implements. Miners of 1849 have described to me practices occurring under their own observation illustrating the mode of manufacture and the efficiency of the crudest cutting-tools. The Indian, without a knife, would skin and dress a deer almost as quickly as his white brother hunter armed with his hunting-knife. Picking up the first thin stone he could find, that, under sharp blows with another stone would flake to an edge, with a few blows he would bring it to the desired form, and, commencing his work with a drawing motion, would open the skin with great nicety. If, under the work, his extemporized knife became dull, he would readily sharpen it with a few brisk blows upon the edge, and continue his work.* This is the constant form of the primitive stone knife; but flint, chert, or obsidian, as each was found, would now be selected as best fitted for this use; and the manner in which this material flakes, together with the uses to which it is to be applied, would compel a resort to substantially the same forms. For dealing heavy blows, for cutting large pieces of wood, the materials of which the celts, axes, etc., are made was the best material available, and this material and its uses would also compel the adoption of substantially the same forms. The mode of attaching axes, adzes, etc., to wooden handles is obviously not so much a matter of necessity, and it is quite natural that we should find local differences in this respect—as we do find perforated axes in one locality and none thus perforated in another. Within moderate limits, the forms of all these implements will vary in accordance with the wants of the tribe, the character of the material, and the skill of the workman. But the use of forms which to us seem quite similar can not be relied upon as proofs of ethnic relationship or geographical connection. The manners, customs, rites, games, social polity, religious culture, and myths are of much more value. These become so thoroughly a part of the mental characteristics of a people that they are retained for centuries, when their origin and significance are alike forgotten.

In the early days of Christianity, the novitiate, upon taking the vows of the Church, turned his face to the west, and renounced the devil and his works, then to the east, and avowed his allegiance to his new master, thus carrying the form of Sabianism into the profession of his new faith; and to-day, over large parts of Christendom, the dead are buried with their feet to the east, a position originally adopted to enable the dead to receive upon their faces the first beams of the rising sun. Easter takes its name and the details of its ceremonies from a heathen god and his rites. Christmas marks an old festival to commemorate the new year. Even the game of jackstones, which our children play, is the form of divination practiced by the Druid priestess. Our marriage ceremony, in the question, "Who giveth this woman to this man?" retains a formality which has come down to us from the time when woman was owned as chattel; and the marriage-ring and the words "With this ring I thee wed," etc., with the significance all through, is a survival from the social polity of ancient Egypt. The bridegroom who would preserve the significance of the ancient ceremony should hand to his bride a piece of money, and say, "To

thy care I intrust all my household goods." The Friday meal of fish, miscalled a fast, is a reminiscence of the worship of Astarte, the favorite goddess of the past, worshiped under so many names. Illustrations might be multiplied indefinitely, showing how games, ceremonies, folk-lore, nursery tales, our symbols and conventional ornamentation, and the feasts and festivals of *the* Church, are, to a great extent, survivals of the most serious ideas and the religious rites of pre-historic heathendom.

We can now hope to pick up only here and there a thread of evidence in regard to the social life, customs, and religious rites of the Mound-builders. But, although no word of their language remains, and no human witness can be interrogated who has seen any of this lost race, we are able to learn something of them.

This paper would be extended to too great a length by a description of a small part of the ancient works of Ohio alone, and without this a few inferences may be drawn from their character, which it is believed will be conceded by all who have explored these works in the field or have given a brief attention to the literature of the subject.

The Mound-builders were an agricultural people; nearly all their important works are upon or overlook the rich alluvial of the river bottoms—lands most easy of tillage and best adapted to the growth of the American grain called maize, or Indian corn.

They had, so far as evidence indicates, no domestic animals.

They mined copper, lead, and mica; obtained petroleum from wells; manufactured salt and pottery, stone, flint, bone, shell, and copper implements and ornaments; and spun yarn, and wove textile fabrics.

They were gathered into fixed communities under such an organization that long-continued and painstaking labor was directed by some potent authority to definite ends, under which works were constructed scarcely excelled anywhere in pre-historic times.

They were not an especially war-like people. Their military works indicate that they were erected to protect the people in their permanent homes, were strongholds overlooking their agricultural possessions, and to which the people could flee for protection when assailed, and under the protection of which they could repel the attacks of enemies.

Spurs from the highlands, projecting into the alluvial valleys, were favorite sites for these works. Wherever such a spur is found, where erosion has nearly separated it from the table-land, leaving a surface which will suffice merely for a foot-path leading to a broader level surface overlooking the valley, we are almost certain to find this spur fortified by one or more ditches and embankments, protecting it from the direction of the table-land—the inclosed spur leveled off, filled with pits, and giving indications of having been long occupied.

Such an inclosure at the junction of Furnace Run and the Cuyahoga River, in Summit county, is protected by a single ditch, and shows the remains of a pathway to a stream at the foot, from which water could be obtained. At the Junction of Paine's Creek and Grand River, in Lake county, a similar but larger spur is protected by three ditches and embankments. A pathway leads to a spring coming out of the bluff near its summit, and another to the stream below. Both are filled with pits, the larger inclosure overlooking much the larger alluvial bottom; and generally, I think, these fortified spurs are found to have a close relation in size to the valley they overlook. Their capacity is the measure of the size of the village community that cultivated the valley at that particular point, and which fled to this stronghold when assailed.

Bancroft, in Vol. IV. of his "Native Races of the Pacific States," quotes from Sartorius's "Ancient Fortifications," published in the "Proceedings of the Mexican Geological Society," as follows: "The region which we subjected to our investigation comprehends the slope of the Sierra to the coast between Orizava and Iolopa.

At an elevation of four or five thousand feet, there are many springs, which, at a short distance form ravines, in a soil composed of conglomerate, or further south of limestone. In their course the ravines unite and form points, sometimes with vertical walls of considerable hight. As the watercourses do not follow a straight line, but wind about, the erosion of the current above the meeting of the ravines, destroys a great portion of the dividing ridge, so that above there remains only a narrow pass, the ridge afterward assuming greater width until the end is reached. This play of nature occurs in the region of which we are speaking at many points and with great uniformity, almost always at the same level of two thousand to twenty-five hundred feet. The natives selected these points, strong by nature, fortified them by art so ingeniously as to leave no doubt as to their progress in military art. * * * Some of them are almost inaccessible, and can be reached only by means of ladders and ropes. They all have this peculiarity in common, that, besides serving for defense, they inclose a number of edifices destined for worship—teocalli—and traces of very large structures used as residences, quarters, or, perhaps, palaces of the priests and rulers. In some of these are remains of springs and large artificial tanks; in others, aqueducts of stone and mortar to bring water from distant springs." In the following pages the author describes many works situate on such projecting spurs which are strongly fortified by walls and ditches carried across the neck communicating with the tableland. These fortified places, like the cliff-dwellings of Colorado, are evidently not extemporized defences designed to meet the exigences of a campaign, or places where a partially conquered people have made a last desperate resistance; but they pertain rather to the ordinary daily life of the inhabitants, indicating a people living in village communities, with stronger local attachments than a hunting race would have, and where military skill was developed for purposes of protection rather than aggression. They constitute a very important link in the chain of evidence tending to show a connection between the mound-builders of the Mississippi Valley, the Cliff-dwellers of Colorado, and some of the native inhabitants of Mexico and Central America. These and the remains of more extensive works in the valleys indicate peaceful village communities, devoted to agriculture, with similar social habits, and resorting to the same modes of protecting themselves against the attacks of more warlike neighbors.

Among the relics referred to the Mound-builders, representations of the human head and face are abundant, sometimes upon pipes, sometimes upon oval fragments of stone upon which the face alone can be carved. Very many of these are peculiar in the form of the mouth, unnaturally open, as if the artist were trying to represent the face of a dead man or of a mask. Now, a striking peculiarity of the Maya Hieroglyphics of Palenque is the frequent occurrence of the human face, often open-mouthed like these Ohio finds, but each with a distinct individuality, generally secured by a change in the form and position of the lips. In forty-nine groups of characters in one inscription, the human face occurs sixteen times, each differing from all the others in outline and expression. On the mound of the Temple of the Sun and Moon, near the city of Mexico, are frequently found small terra-cotta faces, modern imitations of which can be purchased of the natives at very low prices; but they are coarser and less artistic than the originals. A similar terra-cotta vase, or mask, has been found at Isle Royal, associated with copper implements, unquestionably of the age of the Mound-builders. Judge Cox, of Cincinnati, informs us that he has casts of several similar miniature faces, precisely like those of Mexico, of which the originals were found in Kentucky. On some of the pottery exhibited at the Centennial, by George W. Allen, of St. Louis, and which was taken from mounds in Missouri, are figures of the human face, with

to reform the world by penance, published a new law for the government of mankind, and, as Lord Kingsborough, in his eccentric credulity believed, was shown by the Mexican records, was crucified for the sins of the world, lead this distinguished investigator of American antiquities to the belief that Christianity had been introduced into Mexico in pre-Columbian times. The pious Boturini insisted that he found certain historical evidence of the preaching of the gospel in America by the beloved Saint Thomas; and the author of the Book of Mormon, taking the hint from these facts, inserted in that book a detailed account of the mission of Christ to the Americans after his resurrection.

A passage through natural clefts in the rocks, and the sacred tree and grove which took myriad forms, were in the East emblematic of this new birth; and the open door taking the form of a triangle, a rectangle, or the arch of horseshoe form, as men dwelt in caves, tents, or houses of wood and stone, were symbols of the same idea. Some of these, especially the arch of horseshoe form, are so abundant in the remains of prehistoric times in this country, both in the earthworks and inscriptions, as to indicate that it had here a special significance; and the mysterious beneficent power attributed by the superstitious in this country and Europe to the horseshoe, which causes it so often to be nailed to the door-post of the shop or dwelling "for luck" or "to guard against witches," is an unconscious tribute to this old faith.

If the copper medals claimed to have been found by Ordiñez at Guatemala were unquestionably American and pre-Columbian, they would afford conclusive evidence of the use of the combined symbols of the tree and serpent by the American races. All the devices of these medals plainly pertain to this old religious faith. Everywhere in the Old World the serpent or dragon was a significant symbol. In Egypt it was sometimes represented with the arms and legs of a man, walking erect and bestowing gifts upon man, and sometimes of the ordinary form. On Babylonian figures, in the antique ornamentation of the Japanese, Chinese, and most of the nations of Europe, the serpent took the form of a dragon with the wings of bats or birds, the claws of birds, and the teeth of carnivorous animals. In America the serpent was often represented with plumes, and very generally with the teeth of carnivorous animals. It ought to be noticed here that the softened and conventional symbols of this worship, abundant among all the people of Aryan descent, were entirely wanting in the ornamentation of the Japanese and Chinese so far as this was illustrated in their exhibits at the Centennial. If the serpent had the same significance with them that it had elsewhere, the conventional symbolism of this faith took among them such forms that they have no significance to us. But it is probable that the dragon, so conspicuous in the art of the Mongolian races, had no connection whatever with the serpent-worship of the Aryan race, in which it was only one of many symbols of the same idea, and to which the obscure and conventional symbols of this worship are confined. At the Centennial Exhibition it was very easy work to find unconsciously preserved reminiscences of this worship in the conventional ornamentation of all the Aryan nations: I recognized them nowhere else, except in the pre-Columbian relics of America.

With this religious cultus was probably blended, as its first modification, the *worship* of the sun and moon as veritable deities and not as symbols of the creative power, and in the ancient city of Mexico thousands of captives were each year sacrificed in honor of the sun.

A form of human sacrifice, described by Bancroft and others, in which the flesh of the victim cut in small pieces was planted with the seeds of the maize to propitiate a harvest, was almost a complete repetition of the Meriah sacrifice made for the same purpose in India. Other rites too gross to be repeated, but based upon the same ideas, were practiced to secure the germination of the seed.

The yearly sacrifice to the gods,

made by the women of Babylon, as described by Herodotus, similar to some of the abominations denounced by Ezekiel, was repeated in the worship of the gods in America, and the reminiscence of that sacrifice, preserved to a comparatively late day even in Scotland, under the name of "droits du Seigneur," was also found in America.

Many other not less marked coincidences might be given.

If we study the general characteristics of the Aryan race we shall find evidence tending to the same general conclusion. They constitute the white race, the bearded race, the civilizing, ruling, and colonizing race of the world. They exhibit that plastic character which fits them for diverse conditions, creates a personal individuality, prevents the production of a homogeneous, non-progressive community like the Chinese, produces great diversity in social, political, and religious institutions, all of which exhibit themselves as the product of growth and development, with nothing in the character of the people to permanently produce an arrest of development; with aspirations for the future which are for ever dissatisfied with the past and the present, and are ever struggling for an unattained ideal; a race which has an irresistible tendency to subdivisions and local peculiarities, such that, if it should finally occupy the whole earth, it would be occupied by people having all these general characteristics, but as diverse and varied in other particulars as their geographical and climatic habitats. Their colonizing tendency impels them to the uttermost parts of the earth for new dwelling-places, and they are the only race which exhibits a capacity of obeying the command, "Possess the earth and subdue it." Other races possess the places which accident has given to them, and are generally subdued by the earth instead of subduing it. If they go into new countries it is because they are driven to it, not because they seek them. Such also seems to be the characteristics of this pre-Columbian race; yet we find that the detail of its civilization is unique and peculiar. Its government and priesthood initiated no Old-World models, its languages seem to have no affinity with any European or Asiatic tongue: its divisions of time are peculiar, the Aztec month of twenty days and the week of four; their festivals and holidays contain generally no reminiscence of the Old World. In their written language there is no one whole character which seems to have a common origin with a letter or character of the alphabets or hieroglyphics of the Old World; and if they brought the germs of their civilization from the older continent, their separation and isolation occurred before their ancestors had any written language, organized priesthood, system of government, artificial divisions of time, and before they had advanced beyond very crude forms of nature-worship. Indications of their accidental contact with visitors from the older continent are found in effigies with negro and Mongolian features, and in the traditions of such visits; but if they occurred they seem to have left no marks of their influence either in the language or institutions. One Aztec word has been strangely naturalized in Europe — Atlas, Atlanta, Atlantic, rendering it quite probable that the Egyptian legend of the invasion of Europe by an armed host from the lost Atlantis had its origin in the accidental visit to the Old World of men from this continent — perhaps even by the way of the lost Atlantis.

Additional evidence that this American civilization was indigenous and not imported, and that the separation from the inhabitants of the Old World occurred before man had emerged from hunter life is found in the fact that none of the food crops or domestic animals of the Old World were found on this continent. Maize, the potato, tomato, tobacco, etc., belong to America, and were the basis of American agriculture; and so of American civilization.

If the conclusion above reached is correct, it affords an explanation of the coincidences which have been relied upon by investigators to prove that the American pre-Columbian civilization was Egyptian, Semitic, Buddhistic, Phœnician, Druidic, etc.

All attempt to connect them with some branch of the Aryan race; but as in geology we find the fauna and flora of America to bear a closer resemblance to that of the Old World as we trace it backward to the earlier geological periods, so we find the resemblances of these American races to the Aryan more perfect as we grope our way back by all the lights we have to their earliest known habitat. The later resemblances are the natural results of the development of the same germs of civilization in different branches of the same race.

Rev. S. D. Peet, Sec'y of the Ohio State Archæological Society, then spoke at some length on the ancient races of America, giving his views in regard to the various discoveries of America, or, rather, the discovery of its various races.

A vote of thanks was then tendered by the society to Prof. Choate, Prof. Read, Rev. S. D. Peet, and to the visiting brothers from Wadsworth, when the convention adjourned, to meet again at the call of the president.